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PLANNING INFORMATION FOR EMPLOYMENT, TRAINING AND INDUSTRIAL DEVELOPMENT

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CHAPTER I

Overview and Summary

Wisconsin's economy is currently adjusting to regional, national and global changes which have already occurred, yet we are also anticipating future changes and making plans to accommodate them. In order to maintain our economic vigor and improve our ability to accommodate a changing economic environment, we must be aware of the expected changes, have access to accurate and useful information and plan accordingly for the future.

Planning Information for Employment, Training and Industrial Development, known as PIETID, is provided here to inform planners, analysts, policymakers, business people and the general public about the changes that have occurred in Wisconsin's economy and about the changes which are expected during the next five to ten years. Information provided in this report may be used by planners in making employment, training or other economic development plans. Policymakers can use this report as a reference document when considering new initiatives and/or when deciding on changes to existing policies. Business people may find the PIETID useful when a quick profile of the state's labor force is needed. Finally, the general public can benefit from this publication by gaining an awareness of the changes that are occurring in their economic environments.

A. Wisconsin's Economic Outlook.

Our nation's economy has been expanding for five years. The expansion has raised employment levels and lowered unemployment rates. Will this expansion continue through 1988? Expansions do not last forever, yet most economists forecast steady, unspectacular growth through 1988.

The economy has forward movement at this point, and it would take a strong force to stop its growth within the forecast period. Since World War II, business expansions have often been stopped by deliberate action of the Federal Reserve Bank, undertaken to cool the economy. Since severe inflation is not in sight currently and 1988 is a presidential election year, no Federal Reserve Bank monetary tightening is anticipated by most forecasters.

Other events could trigger such tightening. Severe imbalances exist in the nation's financial system. Failure of one or more of the components of the financial system could result in monetary tightening despite the absence of any severe inflation. The financial system's safety net may not be able to continue to handle the imbalances in our economy. Systematic failure in the financial system rather than inflation is the current risk to continued growth of the economy.

1. Wisconsin Labor Force Changes In 1988

The year 1988 is likely to see a continuation of the growth in the labor force and employment experienced in 1987, with little change in the unemployment level and a slight drop in the unemployment rate.

Employment growth in 1988, as measured by the total employment series, can be expected to slow considerably from the 1987; rate the disparity between the growth of nonfarm wage and salary employment and total employment since 1979 was eliminated by a very large 1987 increase. Unemployment and the unemployment level will not change much in 1988, as job opportunities should encourage more jobseekers into the labor market. If the national economic consensus forecast is correct, 1988 should see moderation in the labor force growth and a topping out of the business recovery.

Table 1
Expected Change in the Labor Force Figures for
1985, 1986, and Projected 1987, 1988
(Numbers in Thousands)

	ACTUAL		PROJECTED	
LEVELS	1985	1986	1987	1988
Labor Force	2,374.0	2,399.0	2,475.0	2,500.0
Unemployment	171.0	169.0	150.2	150.0
Employment	2,202.0	2,230.0	2,325.0	2,350.0
Unemployment Rate	7.2%	7.0%	6.1%	6.0%

Source: DILHR, LMI Bureau

2. Expected 1987 Nonfarm Wage and Salary Employment Level Changes --- Mid-1987 Review

Nonfarm wage and salary employment has been increasing during the current expansion of the economy. Since the low point of the recession it has increased by 150,200 and is now at a record level. Expansion in the most recent two years has been slightly over 30,000 each year as the expansion has matured.

Growth in 1987 is likely to be above the rate experienced in the last two years. A gain over 40,000 is likely in 1987. As has been the case in recent years, most of the increase is expected to be concentrated in the service-producing sector, with only about one-eighth of the gain in the goods-production sector.

Manufacturing industry employment has been rebounding significantly thus far in 1987, regaining some of the employment lost since 1984. Over the last two years, manufacturing has declined by 6,400. A gain of about 6,000 now seems likely in bringing manufacturing back to about its 1984 level. The gain is expected to be concentrated in the nondurable portion of manufacturing where the food, apparel, chemical, printing and plastics industries are all expected to continue to increase employment levels modestly. In the durable portion, gains in the employment level of lumber and wood products, furniture and fixtures, stone, clay and glass, and transportation equipment industries are expected to be reinforced by gains now occurring in the other metal working industries. As a group, employment in the durable industries should increase about half as much as the nondurable group.

Employment gains are expected to be sluggish in the transportation, communication and public utilities grouping as the motor freight industry and communications portions are showing small declines from year-ago levels. Public utilities should remain near year-ago levels. Trade employment is continuing its growth pattern of recent years. Most of the growth has occurred in the retail portion, and 1987 is expected to be no exception. Construction industry employment levels have benefited from generally lower interest rates and additional revenue from gas taxes and should be above 1986 levels unless interest rates increase a second time this year. The small mining industry should increase marginally as it responds to the state's increase in construction activity.

3. Employment, Unemployment and Labor Force Changes in 1987

The system Wisconsin has available for estimating total employment levels and unemployment levels can produce surprising results. The year 1987 appears to be shaping up as a year similar to 1973, when a huge employment increase occurred without a corresponding decline in unemployment. Some decline in unemployment is occurring in Wisconsin in 1987. In 1973 employment levels rose by 136,000, the labor force increased by 138,000, and unemployment gained 1,000, while the unemployment rate declined by 0.3 percentage points, as a result of the larger labor force growth, not because of a significant unemployment decline.

At least part of this phenomenon seems to be the result of technical factors which reflect the limited ability of the small current population survey sample used in Wisconsin to "move as the state's economy moves." A lag appears to exist in the ability of this sample to reflect major labor force changes in Wisconsin. Other major factors involved include actual economic improvement, although not on the scale indicated by the size of the employment increase, and the drawing into the labor force of additional jobseekers who, in an improving economy, actually find jobs and do not increase the unemployment levels.

The economy of Wisconsin is dynamic, not static, and components of the economy change in quite different ways at the various points in the business cycle. The number of workers with more than one job, the number of commuters into and out of the state and the extent to which workers are encouraged or discouraged from seeking employment affect employment and unemployment levels extensively. Thus, big variances in the amount of change in total employment levels and nonfarm wage and salary payroll levels are to be expected, even though they are difficult to explain.

This phenomenon tends to "correct" imbalances in the relationships of changes in total employment and nonfarm wage and salary gains over previous years of the business cycle. Over the period 1979 (the prerecessionary peak employment year) through 1986, nonfarm wage and salary employment levels have increased by 54,600 while total employment has increased by only 4,000. The experience thus far in 1987 is removing that difference. It now appears that total employment and nonfarm wage and salary employment levels will have increased by about equal amounts from 1979 to 1987.

Within retail trade, growth is expected to be broadly based with eating and drinking and speciality merchandising firms expected to show the largest increases in employment. Food stores and the miscellaneous retailing group (including catalog merchandisers) are also expected to have significant growth. Automobile dealers and automobile service stations are expected to grow more slowly or decline slightly.

Finance, insurance and real estate firms as a group should continue adding workers but at a little less rapid rate. The insurance grouping should add the most during 1987, with real estate also increasing. Banking and insurance firms should add a few workers to the current employment level, but are not expected to increase employment much over current levels.

Service and miscellaneous industry firms are expected to continue the recent growth pattern with employment increasing at a pace almost equal to the 1986 increase of 13,900. Medical and health services, the largest service grouping, is expected to increase employment significantly. The hospital portion of this grouping should increase employment levels somewhat after a number of years of decline. Most of the health industry gain is expected to occur in nonhospital health care settings. Business services and private social services are expected to continue to add large numbers of workers. Personal care services and the miscellaneous services group (professional specialities) should also increase employment by significant amounts. Private social service organizations are expected to continue adding workers for the seventh straight year.

Other service industry groups such as agricultural services, hotels and rooming houses and membership organizations are all expected to add a small number of workers. Amusement and recreation firms should maintain current employment levels, while employment in private education may decline slightly during 1987. Overall, the service and miscellaneous industry group should continue to increase at one of the more rapid rates.

The government employment level average will increase a little during 1987. A slight shift in distribution may occur with federal, state and local government levels all edging up.

Thus, employment changes in 1987 are expected to be generally similar to 1986 with service industry groups' employment levels generally gaining and goods production industry groups edging up slightly or remaining stable.

Table 2

WISCONSIN NONFARM WAGE AND SALARY EMPLOYMENT FOR 1985, 1986 AND PROJECTED 1987

Average Annual Employment in Thousands

	ACUTAL		PROJECTED		
				Change - 1986-1987	
	1985	1986	1987	Number	Percent
Nonfarm Wage & Salary	1,983.1	2,014.8	2,058.0	+43.2	+ 2.1
Mining	1.9	2.0	2.2	+ 0.2	+10.0
Construction	64.6	63.8	67.0	+ 3.2	+ 5.0
Manufacturing	513.9	512.5	520.0	+ 7.5	+ 1.5
Durable Goods	315.5	310.3	313.0	+ 2.7	+ 0.9
Nondurable Goods	198.4	202.2	207.0	+ 4.8	+ 2.4
Trans. & Public Util.	94.2	92.9	93.0	+ 0.1	+ 0.1
Trade	465.1	477.8	491.0	+13.2	+ 2.8
Wholesale Trade	99.8	100.4	102.0	+ 1.6	+ 1.6
Retail Trade	365.3	377.4	389.0	+11.6	+ 3.1
Finance, Ins. & Real Est.	103.8	107.8	111.0	+ 3.2	+ 3.0
Services	419.0	432.9	447.0	+14.1	+ 3.3
Government	320.6	325.2	327.0	+ 1.6	+ 0.5
Federal Government	27.7	28.4	28.5	+ 0.4	+ 1.4
State Government	82.9	83.5	83.5	+ 0.4	+ 0.5
Local Government	210.1	213.2	215.0	+ 1.8	+ 0.8

Source: DILHR, LMI Bureau

4. Expected 1988 Nonfarm Wage and Salary Employment Level Changes

As the economic expansion continues to age, nonfarm wage and salary (NFWS) growth should be significant in 1988 but not quite as robust as the growth experienced in 1985, 1986 and 1987. Nonfarm wage and salary employment should grow about 25,000 in 1987.

The mining and construction industries, which are interrelated in Wisconsin, should retrench a little as construction of office, commercial and housing is expected to slow. Small declines in employment are expected to occur.

Manufacturing activity in Wisconsin and the employment it generates are expected to reach post-recession highs. Durable goods' employment should expand by as much as nondurable goods' employment, its best performance since 1984. Recovery in nonelectrical machinery building, which usually lags recovery in other industries, should provide most of the improvement, along with improvement in primary and fabricated metals, which supply components for machinery builders.

Growth in the large trade and services groups should continue in 1988 but at reduced rates as over-saturation of consumer-oriented firms is occurring in some specialties.

In the finance, insurance and real estate group, interstate banking has developed slowly and has not affected employment growth to date and most likely will not by the end of 1988. Real estate employment levels may decline a bit while growth in the insurance group should continue. Employment levels in the government group are not expected to change much as budget restraints limit expansion of government services. Overall, 1988 should see continued growth in employment with a reduction in the pace of nonfarm wage and salary employment growth.

Table 3
WISCONSIN LABOR FORCE NONFARM WAGE AND SALARY EMPLOYMENT FOR 1986 AND PROJECTED 1987, 1988
Average Annual Employment in Thousands

	ACTUAL	PROJECTED		Change	
	1986	1987	1988	Number	Percent
Nonfarm Wage and Salary	2,014.8	2,055.0	2,080.0	+25.0	+ 1.2
Mining	2.0	2.2	2.0	- 0.2	- 9.1
Construction	63.8	67.0	65.0	- 2.0	- 3.0
Manufacturing	512.5	520.0	530.0	+10.0	+ 1.9
Durable Goods	310.3	313.0	319.0	+ 6.0	+ 1.9
Nondurable Goods	202.2	207.0	211.0	+ 4.0	+ 1.9
Trans. & Public Util.	92.9	93.0	94.0	+ 0.1	+ 0.1
Trade	477.8	491.0	496.0	+ 5.0	+ 1.0
Wholesale Trade	100.4	102.0	102.0	± 0.0	± 0.0
Retail Trade	377.4	389.0	494.0	+ 5.0	+ 1.3
Finance, Ins. & Real Est.	107.8	111.0	114.0	+ 3.0	+ 2.7
Services	432.9	447.0	455.0	+ 8.0	+ 1.8
Government	325.2	327.0	327.0	± 0.0	± 0.0
Federal Government	28.4	28.5	28.5	± 0.0	± 0.0
State Government	83.5	83.5	83.0	- 0.5	- 0.6
Local Government	213.2	215.0	215.5	+ 0.5	+ 0.2

Source: DILHR, LMI Bureau

B. Report Summary.

The major findings of this report are:

Chapter II

- Wisconsin's population has been growing very slowly in recent years; we have seen annual growth rates of less than 0.3% in the 1980s, which are quite low when compared to the 1960s which had annual growth rates of 1.18%.

- Birth rates have been lower in the 1980s relative to the 1970s. As a result, Wisconsin can expect to have some 112,000 fewer 16-24 year olds in 1995 compared to 1987.

- Levels of unearned income in Wisconsin have increased at a rate that is two to three times that of earned income levels during 1979-84. Net earnings decreased to 67% of total income in 1984, down from the 1979 level of 73% of total income.

- The number of female-headed families increased by over 50% between 1973 and 1984. Studies have found that the decline in the number of husband-wife families accounted for 27% of the decline in the proportion of middle-income families nationwide during 1973-84.

Chapter III

- Labor force participation rates for men in the 25 to 54 year old age group have been decreasing since the late 1950's. The rates for men over the age of 54 have declined dramatically since the 1950's.

- Labor force participation rates for women aged 25 to 54 years have been increasing in the recent past and are expected to increase in the future.

Chapter IV

- Industrial employment growth rates through 1995 range from 21.3% for the service sector industries to -18.3% for mining industry employment. The industrial employment projections for Wisconsin through 1995 show that employment declines should also be expected in industries producing lumber and wood products, furniture and fixtures, stone, clay and glass, textile mill products and apparel.

- Occupational employment growth for retail salespersons, janitors and cleaners, and general managers and top executives is expected to be highest on an annual-openings basis through 1995.

- Occupations expected to have the greatest percentage growth in annual openings over the next ten years include paralegal personnel, actuaries and electronic engineers.

- Occupations expected to have the greatest percentage decrease in annual openings over the next ten years include industrial truck and tractor operators, stenographers, data entry key operators, and furnace, kettle, kiln and oven operators.

Chapter V

- A brief analysis of Job Service applicants and job openings during the April through July, 1987 period finds that the number of minority applicants had increased considerably while the number of white applicants had decreased slightly. The number of veteran applicants had also decreased as well as did the number of dislocated workers.

- Job Service has seen a relatively large increase in the number of applicants who report a "professional" occupational orientation and relatively large decreases in the occupational groups involving precision production workers; general production workers; transportation operatives and material handlers; and equipment handlers and cleaners; and general laborers.

- Despite the declining number of applicants in the "blue-collar" occupations, the ratio of applicants to openings for this group is among the highest for all applicants' occupations.

Chapter VI

A.

- There were 8,362 new firms in 1985, representing 8.7% of all firms in Wisconsin.

- Some 7,104 of the new 1985 firms remained open for business in 1986, which indicated a "new firm mortality rate" of 15%.

- The service industry yielded the most new firms with over one-fourth of all new firms in 1985.

- Firms employing fewer than 20 employees accounted for 97% of all new firms in Wisconsin in 1985.

B.

- In 1986, some 111,930 persons in Wisconsin were employed in agriculture, making up nearly 5% of the state's total employed labor force.

- Personal income gained from farming in Wisconsin made up only 3% of total personal income in 1985.

- Wisconsin had 83,000 farms in 1985, down from the historical peak of 200,000 farms in 1935.

- The changes in Wisconsin's agricultural economy were estimated to have caused some 3,000 farms to go out of business between 1984 and 1985.

- An estimated 10% of all farmers are expected to quit farming in 1987 in Wisconsin.

C.

- Employment in Wisconsin's service sector has grown steadily during recent years despite the recessions of the early 1980s.

- Industries having the largest gains in job growth between 1982 and 1985 in the service sector were personnel supply services, miscellaneous business services, offices of physicians and nursing and personal care facilities.

Chapter VII

- Approximately one-third of Wisconsin's adult civilian population did not participate in the labor force in 1986.

- Rates of labor force non-participation were highest for divorced, separated or widowed women.

- In 1985, about one-half of those not in Wisconsin's labor force were keeping house, 11% were in school and 4% were unable to work.

- About 140,000 people were working part time in 1985 in full-time jobs because of slack economic conditions, which kept their employers from employing them for more than 35 hours per week.

Chapter VIII

A.

- There are an estimated 472,363 persons in Wisconsin in 1987 who are eligible for JTPA Title-II program enrollment. That total is expected to increase to 486,169 by 1995.

B.

- Women made up about 44% of Wisconsin's labor force in 1986, which was up from 16% in 1900.

- In the past 15 years, more women have entered male-dominated occupations; however, women continue to make up the vast majority of workers in traditionally female occupations, as men continue to comprise the majority of those in traditionally male occupations.

- In 1986, nearly 50% of all female workers were employed in clerical and service occupations, while only 7.6% were managers or administrators.

- The gap in earnings between men and women is still large and shows little sign of disappearing in the near future.

C.

- In 1986, there were 336,000 people age 55 and older in the state labor force, or about 14% of the total.

- By 1995, this group is expected to account for only 10% of the state's labor force and is expected to number 270,000.

D.

- In 1986, there were an estimated 278,000 persons in Wisconsin who were 16 to 19 years old. This group of youths had a labor force participation rate of 63.7% and an unemployment rate of 16.3%.

- By 1995, the group of 16-to-19-year-olds is expected to decrease by 111,691 persons for a total of 266,070.

- While the total youth labor force is expected to decrease, a concomitant drop in youth unemployment rates is not expected, especially among minority youth.

E.

- In 1980, the last time when a specific count of the population was taken, Wisconsin had 195,562 disabled adults ages 18 to 64 who accounted for 7% of the state's total adult population.

- Disabled adults had a higher unemployment rate, a lower labor force participation rate and a higher incidence of poverty than did the general population.

- While over 56% of all disabled adults were able to work in 1980, only 45% had participated in the labor force in 1980 with some 40% being employed that year.

- The disabled population is expected to provide more workers to fill the gap left by the expected youth labor shortage in the 1990s.

CHAPTER II

WISCONSIN'S POPULATION AND SOCIO-ECONOMIC CHARACTERISTICS: CURRENT STATUS, RECENT TRENDS AND EXPECTED CHANGES

A. WISCONSIN'S POPULATION CHARACTERISTICS

Wisconsin had an estimated total population of 4,802,250 in 1987 which represents growth of 2.05% over the state's 1980 census count of 4,705,642 (Wisconsin Department of Administration (1), 1987). The annual rates of increase in the 1980s have averaged less than one-third of one percent, which are relatively low when compared to Wisconsin's average annual growth rates of 0.65% in the 1970s and 1.18% in the 1960s (Wisconsin Department of Administration (2), 1987). While the state's total population has been growing very slowly in recent years, different age groups have been changing at far different rates. The increase in the number of people in various age, sex, and racial/ethnic groups will have particular significance for Wisconsin's employment, training and economic development community. In this chapter, a brief examination of the state's demographic and socio-economic characteristics will be made, followed by discussions of the expected changes and their implications for planners, analysts and the general public.

1. Wisconsin's Current Population

Wisconsin's estimated 4.8 million people in 1987 numbered just over 19,000 above the 1986 estimated state population. In 1986, Wisconsin was the 17th largest state in population in the U.S. (U.S. Department of Commerce (1), 1987). Our population density of 88 persons per square mile in 1986 was 30% higher than the nation's population density of 68 persons per square mile of land area (Ibid.). Wisconsin had 65% of its population in metropolitan areas in 1986 which was slightly below the midwest region's average of 70.7% and the nation's average of 76.5% living in metropolitan areas. During the 1980s, the rate of growth in Wisconsin's non-metropolitan areas has been still greater than that of the metropolitan areas, but has slowed considerably from the high growth period of the 1970s (Voss, 1985).

Table 1, below, details Wisconsin's metropolitan/non-metropolitan population distribution for 1986. Table 2, on the next two pages, details Wisconsin's population by county for 1980 and 1986. Wisconsin's current age/sex distribution is noted in Figure 1, and Table 3 depicts Wisconsin's population by racial/ethnic groups in 1970 and 1980 and their projected levels for 1990.

TABLE 1
WISCONSIN'S POPULATION IN METROPOLITAN AND NON-METROPOLITAN COUNTIES: 1980 - 1986

	NUMBER OF COUNTIES	1980 POPULATION	1986 ESTIMATE	1980-86 % CHANGE
METROPOLITAN COUNTIES[1]	19	3,144,779	3,183,702	+1.24%
NON-METROPOLITAN COUNTIES[2]	53	1,560,863	1,605,420	+2.85%
TOTAL	72	4,705,642	4,789,122	+1.77%

(Source: Wisconsin Dept. of Administration, 1986)

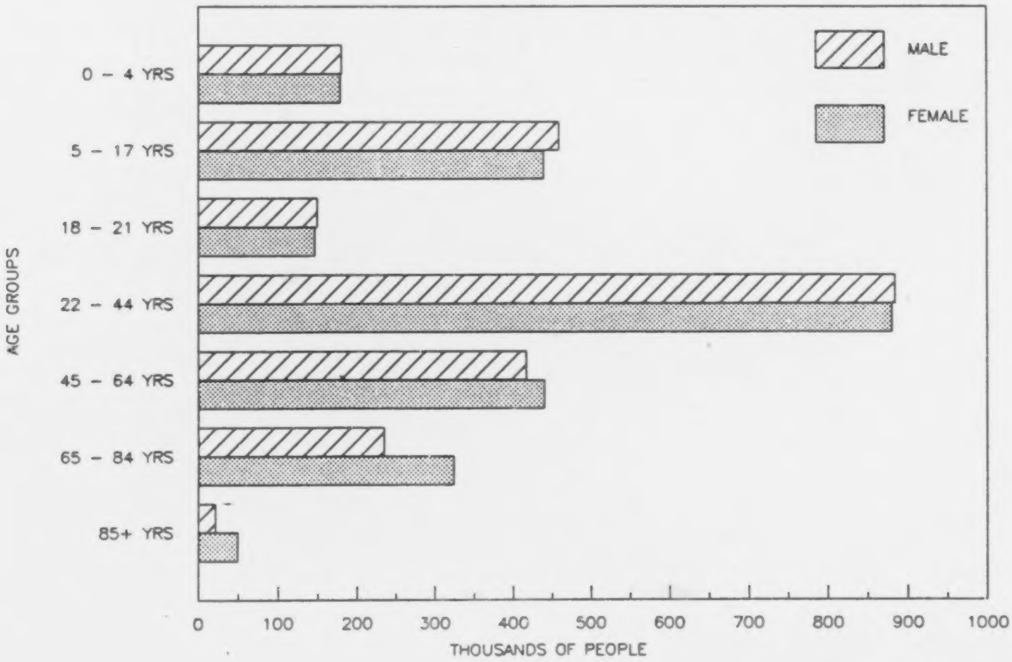
NOTES:

[1] METROPOLITAN COUNTIES INCLUDE: Brown, Calumet, Chippewa, Dane, Douglas, Eau Claire, Kenosha, La Crosse, Marathon, Milwaukee, Outagamie, Ozaukee, Racine, Rock, St. Croix, Sheboygan, Washington, Waukesha and Winnebago.

[2] The state's other 53 counties are non-metropolitan.

FIGURE 1

WISCONSIN'S POPULATION DISTRIBUTION BY AGE AND GENDER: 1987



(SOURCE: WISCONSIN DEPARTMENT OF ADMINISTRATION)

TABLE 2

WISCONSIN'S POPULATION CHANGES
BY COUNTY AND COMPONENTS OF CHANGE: 1980-1986

				COMPONENTS OF NUMERIC CHANGE		
	COUNTY	1980 CENSUS	1986 ESTIMATE	NATURAL INCREASE	NET MIGRATION	TOTAL CHANGE
1	ADAMS	13,457	15,099	126	1,516	1,642
2	ASHLAND	16,783	16,734	393	(442)	(49)
3	BARRON	38,730	40,732	1,501	501	2,002
4	BAYFIELD	13,822	14,118	365	(69)	296
5	BROWN	175,280	187,471	9,137	3,054	12,191
6	BUFFALO	14,309	14,253	439	(495)	(56)
7	BURNETT	12,340	12,893	182	371	553
8	CALUMET	30,867	33,514	1,897	750	2,647
9	CHIPPEWA	52,127	53,886	2,384	(625)	1,759
10	CLARK	32,910	32,613	1,311	(1,608)	(297)
11	COLUMBIA	43,222	43,902	1,286	(606)	680
12	CRAWFORD	16,556	16,527	619	(648)	(29)
13	DANE	323,545	341,262	15,824	1,893	17,717
14	DODGE	75,064	76,631	2,569	(1,002)	1,567
15	DOOR	25,029	26,342	731	582	1,313
16	DOUGLAS	44,421	42,403	1,118	(3,136)	(2,018)
17	DUNN	34,314	35,482	1,508	(340)	1,168
18	EAU CLAIRE	78,805	83,694	3,440	1,449	4,889
19	FLORENCE	4,172	4,344	48	124	172
20	FOND DU LAC	88,964	90,417	3,582	(2,129)	1,453
21	FOREST	9,044	9,327	217	66	283
22	GRANT	51,736	51,795	1,970	(1,911)	59
23	GREEN	30,012	30,464	1,041	(589)	452
24	GREEN LAKE	18,370	18,958	469	119	588
25	IOWA	19,802	20,280	843	(365)	478
26	IRON	6,730	6,421	(85)	(224)	(309)
27	JACKSON	16,831	16,771	466	(526)	(60)
28	JEFFERSON	66,152	66,901	2,444	(1,695)	749
29	JUNEAU	21,037	21,861	629	195	824
30	KENOSHA	123,137	121,236	4,581	(6,482)	(1,901)
31	KEWAUNEE	19,539	20,103	801	(237)	564
32	LA CROSSE	91,056	96,648	3616	1,976	5,592
33	LAFAYETTE	17,412	17,111	829	(1,130)	(301)
34	LANGLADE	19,978	20,215	407	(170)	237
35	LINCOLN	26,555	26,755	578	(378)	200
36	MANITOWOC	82,918	82,697	2,840	(3,061)	(221)
37	MARATHON	111,270	112,094	5,674	(4,850)	824
38	MARINETTE	39,314	40,647	964	369	(1,901)
39	MARQUETTE	11,672	12,615	135	808	564
40	MENOMINEE	3,373	3,947	431	143	5,592

(continued)

TABLE 2

WISCONSIN'S POPULATION CHANGES BY COUNTY AND COMPONENTS OF CHANGE: 1980-1986

(continued)

				COMPONENTS OF NUMERIC CHANGE		
	COUNTY	1980 CENSUS	1986 ESTIMATE	NATURAL INCREASE	NET MIGRATION	TOTAL CHANGE
41	MILWAUKEE	964,988	935,757	39,785	(69,016)	(29,231)
42	MONROE	35,074	36,517	1,339	104	1,443
43	OCONTO	28,947	30,390	791	652	1,443
44	ONEIDA	31,216	32,523	607	700	1,307
45	OUTAGAMIE	128,730	135,910	7,577	(397)	7,180
46	OZAUKEE	66,981	67,779	3,005	(2,207)	798
47	PEPIN	7,477	7,359	152	(270)	(118)
48	PIERCE	31,149	32,617	1,613	(145)	1,468
49	POLK	32,351	34,837	1,141	1,345	2,486
50	PORTAGE	57,420	61,256	2,924	912	3,836
51	PRICE	15,788	16,374	244	342	586
52	RACINE	173,132	169,373	8,245	(12,004)	(3,759)
53	RICHLAND	17,476	17,355	607	(728)	(121)
54	ROCK	139,420	139,078	5657	(5,999)	(342)
55	RUSK	15,589	15,644	520	(465)	55
56	ST. CROIX	43,262	47,247	2,567	1,418	3,985
57	SAUK	43,469	45,613	1,420	724	2,144
58	SAWYER	12,843	13,652	362	447	809
59	SHAWANO	35,928	36,646	794	(76)	718
60	SHEBOYGAN	100,935	102,503	3,591	(2,023)	1,568
61	TAYLOR	18,817	19,387	1,058	(488)	570
62	TREMPEALEAU	26,158	26,521	521	(158)	363
63	VERNON	25,642	26,082	654	(214)	440
64	VILAS	16,535	17,635	152	948	1,100
65	WALWORTH	71,507	73,091	1906	(322)	1,584
66	WASHBURN	13,174	14,209	373	662	1,035
67	WASHINGTON	84,848	87,783	4,799	(1,864)	2,935
68	WAUKESHA	280,203	288,150	11,607	(3,660)	7,947
69	WAUPACA	42,831	44,949	364	1,754	2,118
70	WAUSHARA	18,526	20,002	264	1,212	1,476
71	WINNEBAGO	131,772	137,914	4,944	1,198	6,142
72	WOOD	72,799	75,806	3,486	(479)	3,007
	TOTAL	4,705,642	4,789,122	190,379	(106,899)	83,480

1/ NOTE: ( ) Denotes negative value.

Source: Kale and Voss, 1986.

TABLE 3

WISCONSIN'S POPULATION BY RACE AND SPANISH ORIGIN: 1970-1990

		Race			Spanish
	All Races	White	Black	All Other	Origin
Population[1]					
1970	4,417,821	4,258,959	128,224	30,548	(2)
1980[3]	4,705,642	4,443,035	182,592	80,140	62,972
1990	4,900,000	4,563,000	243,000	94,000	125,000
Percent Change					
1970-80	6.5	4.3	42.4	162.3	(2)
1980-90	4.1	2.7	33.1	17.3	98.5
Natural Increase[4]					
1970-80	277,672	239,349	32,226	6,115[5]	(2)
1980-90	333,000	280,000	43,000	10,000	19,000
Net Migration					
1970-80	10,149	-55,273	22,142	43,477	(2)
1980-90	-138,642	-160,035	17,408	3,860	43,000
Percent of Total Population					
1970	100.0	96.4	2.9	0.7	(2)
1980	100.0	94.4	3.9	1.7	1.3
1990	100.0	93.1	5.0	1.9	2.5

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[1] Source of figures 1970 and 1980: 1970 Census of Population, Volume I, Chapter B, Part 51, General Population Characteristics, Table 17; 1980 Census of Population, Volume I, Chapter B, Part 51, General Population Characteristics, Wisconsin, Tables 15 and 16; 1990 figures estimated by Paul Voss, Applied Population Laboratory, University of Wisconsin-Madison.

[2] The Spanish Origin population for 1970 is not available in a form consistent with the 1980 count.

[3] The data for racial subgroups does not incorporate some marginal corrections made to the 1980 total count after publication of counts by race. As a consequence, the figures shown for racial subgroups do not add to the corrected total given in column I.

[4] Source of figures 1970-80: Wisconsin Public Health Statistics. Births and deaths have been recomputed to an April I to March 30 basis to match census dates; 1980-90 figures estimated by author.

[5] This figure includes a few births and deaths reported as "race unknown."

2. Recent Trends in Wisconsin's Population

The most remarkable aspect of Wisconsin's recent population change is its relatively slow growth. Kale and Voss (1986) predict that the 1980s will witness the slowest growth Wisconsin has seen in any previous ten-year period. Between 1970 and 1980, Wisconsin added 287,000 residents; for the five-year period 1980-85, the growth was only 66,000 (Ibid.). Despite Wisconsin's slow growth in the early/to mid-1980s, recent Census Bureau estimates reveal that Wisconsin's rate of population increase has exceeded that of any other state in the East North Central region. During 1980-85, Ohio and Michigan lost population while Indiana and Illinois grew at rates considerably lower than Wisconsin's.

The spatial distribution of population change in Wisconsin during 1980-86 is seen in Figure 2. Deavers (1986) found that during the 1970s a revival in population growth was occurring in the nation's non-metropolitan counties. For that decade as a whole, the nation's non-metro growth rate exceeded the metro area rate by almost 40%. The population "turnaround" was primarily due to migration patterns; urban dwellers of the '60s and '70s were moving to rural areas. By 1980, between 3.5 and 4 million of 1970s metropolitan residents had moved to the nation's rural areas (Ibid.).

Wisconsin experienced a similar rural turnaround phenomenon in the 1970s. In the 1980s, however, growth rates in Wisconsin's non-metropolitan counties have declined relative to the 1970s. As seen above in Table 1, the state's non-metropolitan counties, generally, grew faster than did the metro counties during 1980-86. Notable exceptions to this pattern are seen in the relatively high growth rates in the metropolitan counties of Brown, Calumet, Dane, La Crosse, Outagamie and St. Croix. The cities of Madison and Green Bay increased in population between 1960 and 1985, whereas the cities of Milwaukee, Kenosha and Racine lost population in that period (Voss, (2), 1987).

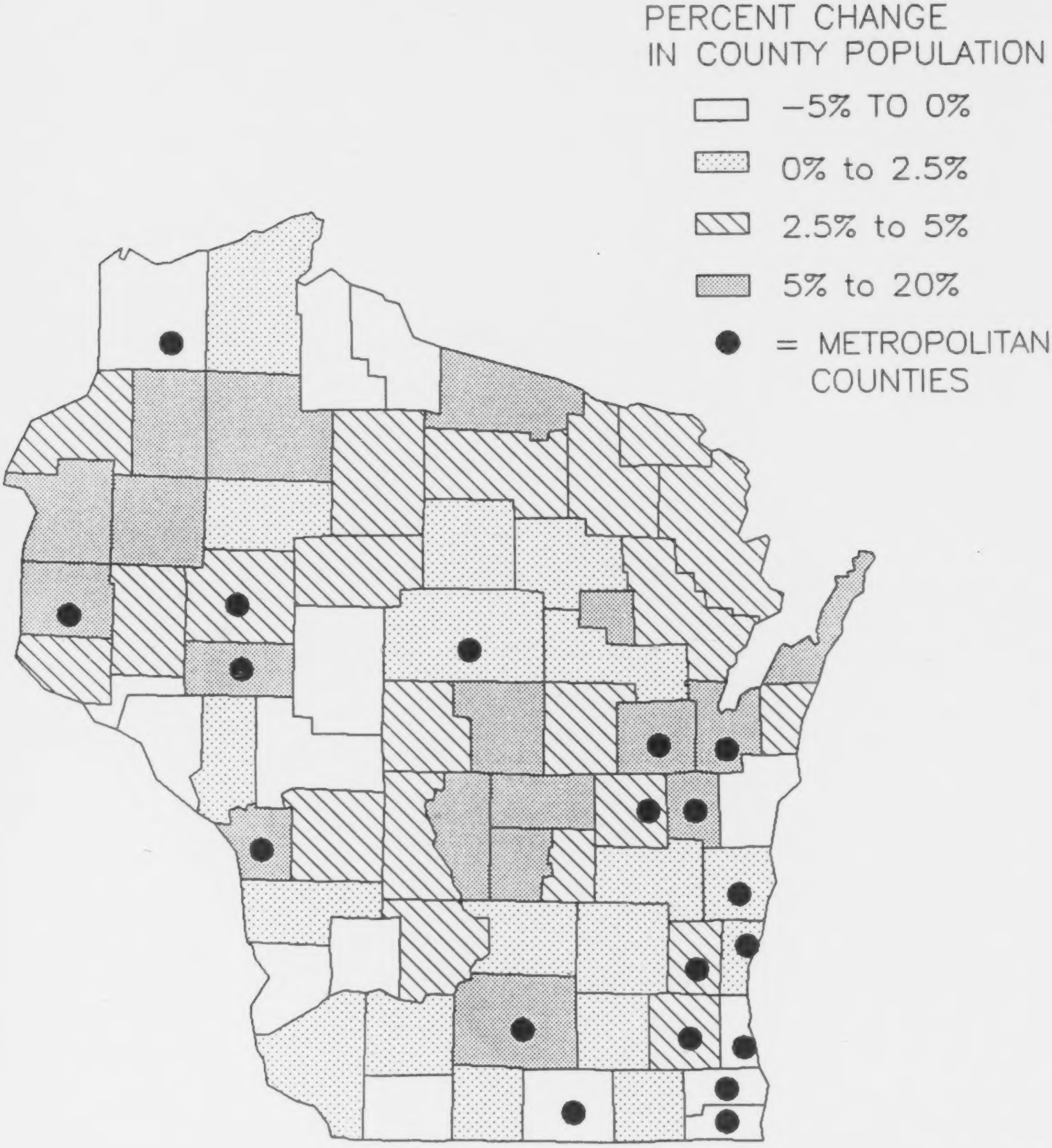
The rural population turnaround was especially noted in several northern counties (Oneida, Vilas, Sawyer, Washburn and Burnett) and in some of the central counties (Adams, Marquette and Waushara) during the 1970s (Ibid.) While the rates of overall growth and in-migration were relatively large in these areas, the actual numbers of people moving into individual counties have been averaging fewer than 500 persons per year. Despite the small numbers of people moving into Wisconsin's rural counties, their effect on local labor markets will be felt; hence these demographic trends should be noted for program planning purposes.

The components of population change as seen above in Table 2 reveal some of the dynamics behind the state's demographic make-up. "Net migration" accounted for the state losing 106,899 persons during 1980-86 and "natural increase" added 190,379 (Wisconsin Department of Administration, Op. Cit.). Net migration is estimated by DOA as the difference between total population change and natural increase. Natural increase is the difference between births and deaths in a given year. Net migration is thus imputed; only births and deaths are actually registered and counted during all years.

FIGURE 2

WISCONSIN'S POPULATION CHANGES BY COUNTY: 1980–86

STATEWIDE AVERAGE: 1.77%


PERCENT CHANGE IN COUNTY POPULATION
□ −5% TO 0%
░ 0% to 2.5%
▧ 2.5% to 5%
▒ 5% to 20%
● = METROPOLITAN COUNTIES

(SOURCE: WISCONSIN DEPARTMENT OF ADMINISTRATION: 1986)

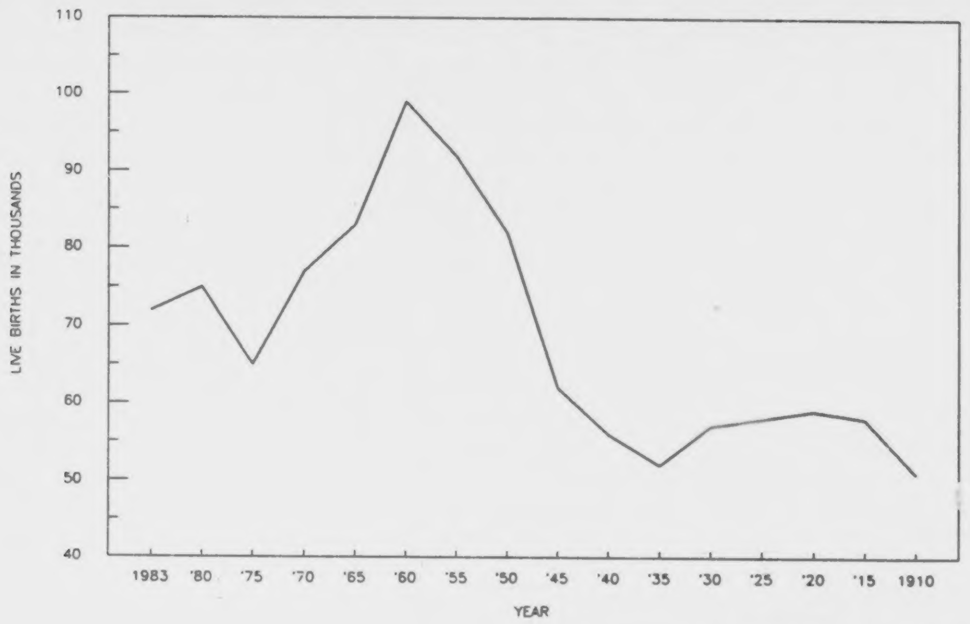
Economic factors, such as changes in employment opportunities, changes in the cost of living, etc. will affect the migration patterns of people especially among the working population and their dependents. The deep recession of 1982 very likely influenced the pattern of demographic change in Wisconsin during the 1980-85 period (Kale and Voss, Op. Cit.). Demographers estimate that during the first half of the 1980s that out-migration from Wisconsin accelerated to a level that exceeded 100,000 persons (Ibid.). That level of out-migration likely subsided during the 1984-85 period; however, the previous years' out-migration still affects metropolitan and non-metropolitan counties in most parts of the state. The more closely a county's economic base is dependent on manufacturing, the more likely it is to suffer wide migration fluctuations during economic cycles (Ibid.). Counties where net out-migration did not occur in the 1980s were those primarily dependent on recreation and tourism or those with a high proportion of college students in their populations. Although those counties had net in-migration, their 1980 population growth rates were significantly lower than their rates in the 1970s. The downturn in growth in the recreational and agricultural counties during the 1970s reduced the overall non-metropolitan growth rate in Wisconsin and hence tempered the earlier noted rural population turnaround phenomenon.

The overall slow growth in Wisconsin's population during recent years has been attributed to a decline in fertility (Wisconsin Department of Administration, (2), 1987). The annual birth rate fell from an average of 23 births per 1,000 population in the first half of the 1960s to 18 per 1,000 in the second half and then to 15 per 1,000 in the 1970s (Ibid.). Figure 3 below depicts the significant decrease in annual live births in Wisconsin occurring after the peak of the baby boom in 1960.

Although migration assumed a greater role in Wisconsin's total population change in the 1980s (a net out-migration of over 100,000 persons occurred in the first half of the 1980s), the changes in birth rates and the implications of the "baby bust" played a greater role in the change of age-specific groups of people. The upturn in the number of births during the mid- to late-'70s, seen below in Figure 3, is an "echo" effect of the baby boom. The large number of people born in the mid- to late-'50s began producing offspring in the '70s, however at a much lower rate than did people who were bearing children in the '60s. The preschool age population (ages 0-4 years old) peaked at 476,000 in 1962 and decreased in number to a low of 326,000 in 1977. The baby boom echo resulted in a slight increase in the number of pre-schoolers to 365,000 in 1985; however, recent data suggests that a slowing birth rate will decrease the number of 0-4 year-olds to 350,000 in 1995.

The school-age population (5-17 year-olds) reached a high of 1,202,000 in 1970 and declined to an estimated 908,000 in 1985. This age group is expected to reach a level of about 950,000 in 1995. The 22-to 44-year olds grew from 1.09 million persons in 1962 to 1.76 million in 1987 and are expected to exceed 1.84 million in 1993. From that year onward, they are expected to show a downward trend in growth. Middle-aged persons (45-64 year olds) increased in number through 1977 when they peaked at 900,000. Their total population is estimated at 857,000 in 1987 and is expected to grow to 978,000 by 1995.

WISCONSIN LIVE BIRTHS: 1983 - 1910



(SOURCE: WISCONSIN DEPARTMENT OF HEALTH & SOCIAL SERVICES)

Elderly persons, as a group, have shown some significant population change characteristics over the past 15 years. The rates of population growth of people 65 years of age and older have been much higher than those of people under age 65 during the 1970-85 period. Table 4 below depicts the different growth patterns for different age groups of people in Wisconsin.

TABLE 4

CHANGES IN NUMBER OF PEOPLE UNDER 65 AND 65 AND OLDER IN WISCONSIN 1970 - 1985

	Under 65 Years Old	65 Years Old and Older
1970 POPULATION	3,947,200	470,621
1975 POPULATION	4,055,841	509,900
1970-75 % CHANGE	2.75%	8.35%
1980 POPULATION	4,141,454	564,188
1975-80 % CHANGE	2.11%	10.65%
1985 POPULATION	4,159,503	612,247
1980-85 % CHANGE	0.43%	8.52%

(SOURCE: Kale and Voss, 1986)

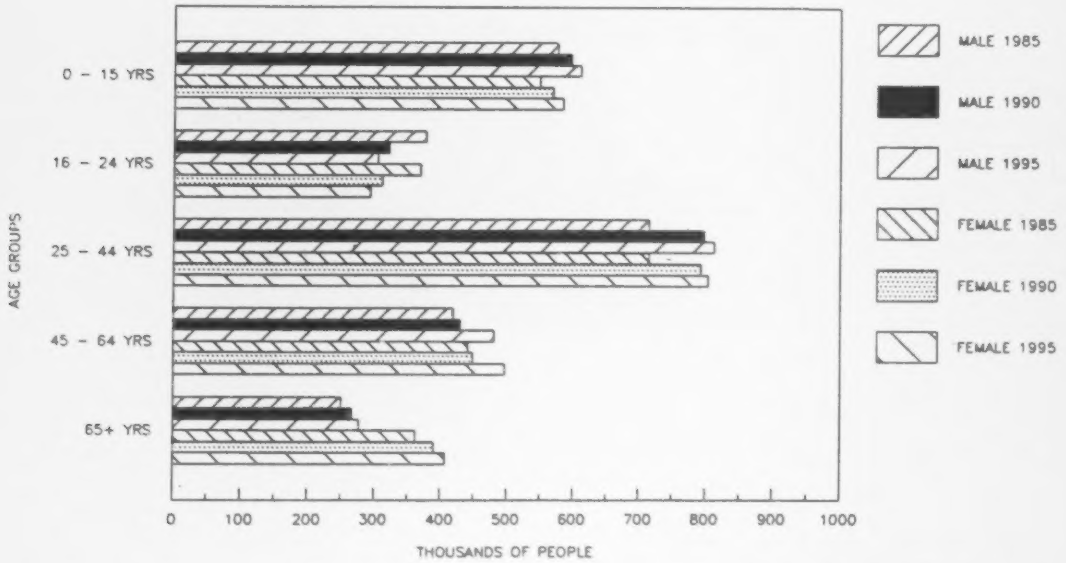
The higher rates of growth among groups of older people are remarkable on two accounts. First, the rates of growth remained high despite out-migration among retirees moving to the sun-belt for climate or for inheritance-tax-avoidance reasons. Second, the rates of growth of the older population have been relatively constant when compared to the fluctuating growth patterns of younger groups. The growth rates among the elderly indicate the passage of many more persons into the older age groups who remain in Wisconsin (a process of "aging in place") rather than through death or out-migration. Older senior citizens aged 85 and over have grown in number from 20,000 in 1958 to an estimated 70,291 in 1987. Declining mortality rates and lower-than-expected out-migration rates have been the major reasons for the growth in the number of persons age 85 and older in Wisconsin.

3. Expected Changes in Wisconsin's Population

Wisconsin's estimated total population of 4,802,250 in 1987 is expected to increase by 4.78% to 5,031,959 persons in 1995 (Wisconsin Department of Administration (1), 1987). The low annual rate of increase (0.597% per year) in population through 1995 will be experienced differently among different age/sex groups of people. Figure 4, below, depicts population projections for males and females in different age groups during the 1985-1995 period.

FIGURE 4

WISCONSIN'S POPULATION PROJECTIONS BY AGE/SEX
1985 - 1995



(SOURCE: WISCONSIN DEPARTMENT OF INDUSTRY,
LABOR AND HUMAN RELATIONS, 1986)

The most significant negative change expected in Wisconsin's population will be the decrease in the number of 16-24 year-olds. There were an estimated 702,845 16-24 year-olds in Wisconsin in early 1987. Their total is expected to decrease to 590,203 by 1995; this expected change represents a decrease of 16.03% during the 1987-1995 period. The decrease will be shared about evenly between males and females; there will be an estimated 55,607 fewer 16-24 year-old males and 57,062 fewer females in this age group in 1995 compared to their respective totals in 1987. While the 16-24 year-old population is expected to decrease by 16% between 1987 and 1995, the rest of the population is expected to increase in number by 8.3%

The most significant positive changes in Wisconsin's population through the 1990s will be in the 45-64 year-old and the 85-and-older-age groups. The middle-aged group is expected to increase its 1987 level of 856,500 by 14% to reach a level of 977,500 in 1995. The older senior citizens (85 years of age and older) are expected to increase in number from their 1987 level of 70,250 to a 1995 estimated level of 90,250. This expected growth of older senior citizens represents an increase of 28% between 1987 and 1995. The relatively large increase in middle-aged people reflects the aging of the baby boom, while the greater increase in older residents reflects lower mortality rates and relatively lower out-migration rates.

Racial composition in Wisconsin is also expected to change as the projections for the non-white population suggest a growth rate through the 1990s exceeding that of the White population's. Wisconsin's racial/ethnic composition, depicted above in Table 3, finds Hispanics nearly doubling their proportion of the total population over the 1980-1990 period. Despite their relatively fast rate of population growth, persons of Hispanic origin are expected to make up only 2.5% of Wisconsin's total population in 1990. Blacks are expected to total 243,000 in 1990, which represents a 33% rate of growth during the 1980-1990 period. Whites are expected to grow in number by only 2.7% during this period.

Persons of all other races (and of unknown race) are expected to grow in number from a base of 80,140 in 1980 to 94,000 in 1990. This group experienced a 162% rate of increase in the 1970s, presumably due to classification changes and due to high rates of in-migration. Classification changes occur when people report themselves as being in a racial group during one census that was different from the group under which they were recorded in a previous census. Most of the growth of the number of persons in other races in the 1970s was due to migration. In the 1980s, however, this group experienced an increase of 13,860 people, 10,000 of whom were added through natural increase. Thus minority groups in Wisconsin are expected to remain relatively small (just under 7% of the total population in 1990), but their rates of total growth and rates of natural increase are expected to remain relatively high through the 1990s.

B. WISCONSIN'S SOCIO-ECONOMIC CHARACTERISTICS.

Wisconsin's households, families and individuals have undergone considerable change in their sources and levels of income during the recent past. Table 5, on the following page, details changes in Wisconsin's personal income characteristics during the 1979-84 period. The most significant change in the personal income profile during that period was in the shift in importance of "unearned" income. While net earnings increased by 33% during that period, transfer payments and property income increased by 66% and 91% respectively. Transfer payments include social security, welfare payments, retirement income and other forms of direct cash transfers. Property income includes dividends, interest and rental income. As a share of total personal income, property income rose from 14% of the total in 1979 to 19% in 1984. Net earnings, as a share of total personal income, decreased from 73% in 1979 to 67% in 1984. While transfer payments in total have grown statewide by 6.6% during the 1979-84 period, they have increased their share of personal income from 12% in 1979 to 14% in 1984.

In counties where there is a relatively large proportion of retired persons, the increase in transfer payment income has been larger than that of the state average. Retired persons are less likely to travel out of an area to make expenditures, when compared to wage earners, and are more likely to spend a greater portion of their total income than are other income earners. Thus, an increase in transfer payment income may mean more revenue for an area's retail and service sectors when compared to similar increases in wage/salary or property income.

Earnings by industry in Wisconsin during 1979-84, as seen below in Table 6, show a number of expected changes. Earnings from farming and construction showed very small growth rates during 1979-84. Earnings from mining activities declined by over 10% from 1979 to 1984. The most significant positive changes in earnings have been in the service industry, agricultural services (including forestry and fishing), in government, and in the finance, insurance, and real estate industries. Earnings from these industries grew between 50% and 62.5% during the 1979-84 period, whereas the average rate of growth of earnings from all industries was 33% during that period. The importance of the shift to service industries (business, personal, agricultural, health, legal, etc.) and away from resource-based (mining and farming) industries is manifested in the earnings data.

The implications of the shifting sources of income and employment are of current interest to many analysts and writers, as recently seen in non-technical and academic literature. The "declining middle class" theory has been suggested by some analysts as leading the U.S. economy toward a bi-polarized income distribution, whereas other analysts are inconclusive about the trend occurring at all. Table 7, on the next page, depicts some of the changes in employment and average weekly earnings in Wisconsin during the 1979-86 period.

The economic loss from inflation-battered earnings is staggering when one considers the number of employed workers throughout the state. Wisconsin's nonfarm wage and salary employment grew by 54,600 from 1979 to 1986, reaching 2,014,800 at the end of that period. Earnings each week averaged $236.54 in 1979 and $346.19 in 1986. Accounting for inflation, real average earnings dropped by $11.12 per week. That is, when adjusted for inflation, a wage earner had $357.31 in buying power per week in 1979 and $346.19 in 1986. If we multiply that loss by each of the two-plus million nonfarm wage and salary earners in 1986, and multiply again by 52 weeks, the purchasing power loss amounts to over $1.6 billion throughout the state in 1986 alone.

Table 5

Changes in Wisconsin's Personal Income

By Source: 1979-1984

	(In Thousands)						% Change
	1979	1980	1981	1982	1983	1984	(1979-1984)
Total Personal Income	$40,597,627	44,262,758	48,596,267	51,078,376	53,338,846	58,994,953	+45.3%
Net Earnings by							
Place of Residence[1]	29,790,941	31,456,755	33,323,548	33,996,608	35,400,616	39,577,923	32.85%
Property Income [2]	5,848,243	6,882,142	8,553,200	9,507,456	9,826,355	11,169,850	90.99%
Transfer Payments[3]	4,958,443	5,923,361	6,719,519	7,574,312	8,111,875	8,247,180	66.3%
Population	4,665.9	4,728.4	4,735.2	4,745.1	4,746.0	4,766.1	2.15%
Per Capita Total Personal Income	8.70	9.36	10.26	10.76	11.24	12.38	42.30%

(Source: U.S. Dept. of Commerce, Bureau of Economic Analysis)

NOTES:

[1] Net earnings by Place of Residence equals total earnings by place of work minus contributions to social insurance plus adjustment for residence.

[2] Property Income includes income gained from dividends, interest and rent.

[3] Transfer Payments include all governmental income support and retirement income, private pension funds, AFDC, general relief and other forms of welfare.

That value is an overstatement because there are some qualifiers to this analysis. First, it is not possible with the data available on Wisconsin workers to differentiate between full-time and part-time workers. Increases in the number of part-time workers have an important effect on earnings, tending to bring the weekly average down. And, while many work part time because no full-time jobs are available, many work shorter weeks by choice.

Table 6

Changes in Wisconsin's Earnings

By Industry: 1979-1984

			(In Thousands)				% Change
Industry or Sector	1979	1980	1981	1982	1983	1984	(1979-1984)
Farm	$ 1,626,282	$ 1,635,682	$ 1,629,999	$ 1,361,859	$ 972,644	$ 1,681,317	3.38%
Non-Farm	29,303,209	31,141,138	33,202,686	34,177,926	35,971,609	39,546,490	34.96%
Private	25,421,988	26,838,405	28,574,673	28,993,683	30,495,075	33,707,436	32.59%
Ag., Forestry & Fishing	98,580	104,027	119,444	125,802	132,568	151,993	57.31%
Mining	53,199	54,739	56,228	47,095	46,651	47,567	-10.59%
Construction	1,790,644	1,672,831	1,615,831	1,472,917	1,569,729	1,791,503	0.05%
Manufacturing	11,011,192	11,477,822	12,145,953	11,815,910	12,197,236	13,704,054	24.46%
Trans. & Pub. Utils.	1,918,069	2,064,271	2,218,749	2,331,533	2,431,037	2,615,811	36.38%
Wholesale Trade	1,804,444	1,959,385	2,114,500	2,173,330	2,230,070	2,443,502	35.42%
Retail Trade	2,945,261	3,020,644	3,124,649	3,240,836	3,240,051	3,705,535	25.81%
Fin., Ins., & R.E.	1,437,263	1,599,489	1,663,338	1,765,765	1,980,475	1,153,759	49.85%
Services	4,365,366	3,935,722	5,505,981	6,020,495	6,462,258	7,093,712	62.50%
Government	3,881,221	4,302,733	4,628,013	5,184,243	5,476,534	5,839,054	50.56%
Total[1]	30,929,491	32,776,820	34,832,685	35,539,785	35,944,253	41,227,807	33.3%

(Source: U.S. Dept. of Commerce, Bureau of Economic Analysis)

[1] Total Personal Earnings by Place of Work.

Second, earnings reflect income from jobs, not workers, so dual-job-holders are included more than once in the analysis. While the double counting of some workers in the equation lowers the weekly average, the dual-job-holder is likely to have a higher income and to have a significantly higher portion of discretionary income. Averages do mask trends; not all wage earners and salary workers lost real revenue in the 1979 to 1986 period. While manufacturing workers in total remained even in earning power, losing only forty cents per week over the seven-year stretch, non-durable goods manufacturing employees actually gained an average of $5.30 per week. Interestingly, while all manufacturing workers lost real earnings, the employment level also decreased by nearly 80,000. The highest employment growth industry, the service sector, added 81,000 workers and also added an average $15.60 to weekly earnings. However, the service industry remains a relatively low-wage-paying industry, even with improved real earnings. Construction, a high-wage industry, lost both employment and real earnings. The finance, insurance and real estate industry gained employment and had the highest real wage gain of over $42 per week. Loss of real earnings and purchasing power by workers in any one industry affects the entire economy, and thus workers in all industries.

TABLE 7

EMPLOYMENT AND AVERAGE WEEKLY EARNINGS
Wisconsin: 1979 - 1986

	1979			1986		1979 to 1986	
	Employed (000's)	Avg. Wkly. Earnings	Earnings in 1986 $'s	Employed (000's)	Avg. Wkly. Earnings	Employment Difference	Real $ Difference
Nonfarm Wage & Salary	1960.2	$236.54	$357.31	2014.8	$346.19	54.6	-11.12
Manufacturing	591.3	307.20	464.05	512.5	463.65	78.8	-0.40
Durable Goods	393.7	314.76	475.47	310.3	474.62	-83.4	-0.85
Nondurables	197.6	291.86	440.88	202.2	446.13	4.6	5.25
Services	351.9	173.60	262.24	432.9	227.81	81.0	15.57
Trade	441.2	167.30	252.72	447.8	232.16	36.6	-20.56
Wholesale	96.4	297.48	449.37	100.4	422.31	4.0	-27.06
Retail	344.8	130.21	196.67	377.4	167.21	32.6	-29.46
Finance, Insurance & Real Estate	90.3	235.11	355.15	107.8	397.45	17.5	42.30
Transportation, Communications, & Public Utilities	92.2	300.20	453.48	92.9	429.50	0.7	-23.98
Government	310.1	233.10	352.12	325.2	375.80	15.1	23.68
Construction	80.5	310.12	468.46	63.8	408.03	-16.7	-60.43

(Source: Wisconsin Dept. of Industry, Labor and Human Relations: 1987)

Economist Katherine Bradbury's article on "The Shrinking Middle Class," (1986) suggests some approaches to resolving the declining middle class argument. Table 8 below summarizes her evidence of the so-called declining "middle class." The real incomes of American families rose steadily between 1949-73, except during recessionary periods. Bradbury found that family income reached new heights after each recession ended during the 1949-73 period. In the post-1973 period, however, income gains were not seen after the recessions. In 1984, after two years of employment expansion, real median income was lower than the 1979 level. The apparent redistribution of families of different income groups was described by Bradbury as being relatively more unequal in 1983 than in 1949 and much more unequal than in 1973. In 1929, the top 20% of all family income earners possessed 55% of the total family income. By 1984, this group accounted for 43% of total family income. The lowest 20% of all family income earners shared only 6% of total family income in the late 1960s which declined to 5% of the total in 1984. The middle 60% of all family income earners experienced a decreasing share of the total from 54% in the late 1960s to 52% in 1984. From an aggregate view, the so-called middle income groups have lost a relatively small portion of total family income. Hence, the "declining middle class" theories should be viewed with caution.

Table 8
U.S. Family Income Distribution: 1973-84

Income Group (Constant 1984 $)	Percentage of Families 1973	1984	Percent Change 1973-84
Less than $20,000	32.1%	36.6%	+4.3%
$20,000 - $49,000	53.0%	47.9%	-5.1%
$50,00 and above	14.9%	15.6%	+0.8%
Median Income	$28,048	$26,000	-7.3%

(Source: Bradbury, Op. Cit.)

Theories of the movement of families from one income group to another fall under two basic themes: the shift towards lower-paying jobs in the economy, and the changing demographics of families. Porterfield, in her study of the growing service sector (1986), stated that a Federal Reserve Board economist attributed economic success to the ability of the economy to provide a rising standard of living, not by the shares of employment in a particular sector. The FRB economist found that between 1973 and 1984, the fraction of families earning a middle income declined for nearly all types of demographic groups. Thus, demographic changes among families were not the major causes for the decline. Demographic factors examined included: migration patterns, changes in family size, age of family head, and wife's participation in the labor force. While median family income declined for all family groups between 1973 and 1984, the declining family size accounted for only about 20% of the decline in the proportion of middle income families.

The number of female-headed families increased by over 50% between 1973 and 1984 nationwide. Husband-wife families were concentrated in the middle income group, while female-headed families were concentrated below the middle income group. The decline in the number of husband-wife families accounted for 27% of the decline in the proportion of middle income families (Shaffer, 1987). In conclusion, the Federal Reserve Board study found that demographic changes explained only 8% of the declining proportion of families earning a middle income between 1973 and 1984 in the U.S. Among the changes causing the decline in the number of middle class income families, smaller family size, relatively fewer husband-wife families and relatively more female-headed single-parent families stood out as being significant.

The shifting-job-structure approach to explaining the decline in the proportion of middle income earners is less convincing than the demographic change argument. In 1984, 26.3% of all manufacturing workers nationwide earned above $30,000, while 26.4% of workers in business and repair services and 45.9% in professional services earned comparable wages (Porterfield, Op. cit.). On the lower end of the income scale, 27.8% of manufacturing workers earned less than $15,000, while 17.5% of workers in professional services and 34.2% of business and repair service workers fell into this category in the U.S. in 1984 (Ibid.). The Federal Reserve economist noted that the bulk of new employment in the U.S. during the past 15 years has been in health and business services and that this trend is expected to continue for at least the next ten years. Given the range of occupations and their different pay levels, the shift in employment to health and business services does not fully explain the apparent decline in the number of middle income earning families. Average annual earnings for year-round full-time workers in the U.S. in 1984 in all industries was $22,184; in manufacturing industries, $23,668, and in service industries, $21,731. Professional service industry workers' annual earnings were $23,650 in 1984; however, male professionals' average was $34,3887 and females' average was $16,492 (Porterfield, Op. Cit.).

Regardless of the causes of the shifts in income groups, the trend of declining average family income will manifest itself in changed purchasing patterns, changed levels of output for consumer goods and services and eventually changed levels of employment across industries and occupations.

References

Bradbury, Katherine L.
"The Shrinking Middle Class," New England Economic Review, September/October, 1986.

Deavers, Kenneth L.
The Future of Non-Metro America. Paper presented at: Demographic Outlook '86, a conference sponsored by American Demographics Institute, June 4-5, 1986.

Kale, Balkrishna and Paul R. Voss,
Toward an Understanding of Population Growth In Wisconsin In the 1980s. Madison, Wisconsin Department of Administration and the Applied Population Laboratory of the University of Wisconsin-Madison. (Staff Paper, mimeographed.)

Porterfield, Shirley
"Services Are Not Just 'Taking In Each Other's Laundry.'" Community Economics, No. 122, December, 1986. University of Wisconsin-Madison, Department of Agricultural Economics, Madison, Wisconsin.

Shaffer, Ron
"The Shrinking Middle Class," Community Economics, No. 125, March, 1987. University of Wisconsin-Madison, Department of Agricultural Economics, Madison, Wisconsin.

U.S. Bureau of the Census.
Statistical Abstract of the United States, 1987. Bureau of the Census, Washington, D.C.

U.S. Bureau of Economic Analysis.
Survey of Current Business. Volume 86, April, 1987, Bureau of Economic Analysis, Washington, D.C.

Local Area Personal Income: 1979-84, Volume 4, Great Lakes Region. Bureau of Economic Analysis, Washington, D.C., 1986.

Voss, Paul R.
A Demographic Portrait of Wisconsin's People. Madison, Applied Population Laboratory, Department of Rural Sociology, University of Wisconsin-Madison, 1987. Staff Paper, Mimeographed.

State Population Growth Slows During First Half of the 1980s, Wisconsin State Data Center News, Summer/Fall, 1985.

Wisconsin Department of Administration, Demographic Services Section.
Wisconsin Population By Age and Sex: 1958-1995 Madison, 1987.

Wisconsin Population Projections: 1980-1985, By Sex and Single Year of Age. Madison, 1987.

Official Population Estimates for 1986. Madison, 1986.

Wisconsin Department of Industry, Labor and Human Relations, Labor Market Information Bureau.

Wisconsin Economic Indicators. Madison, March, 1987.

CHAPTER III

LABOR FORCE ANALYSIS

A. Labor Force Participation.

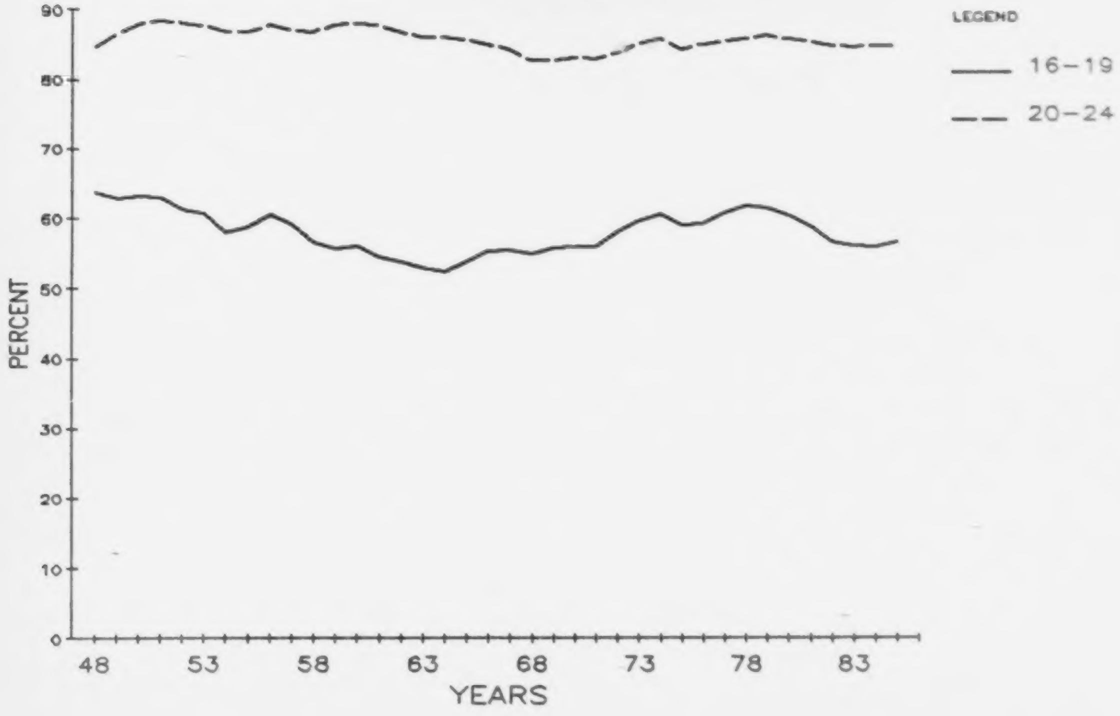
Labor force projections depend upon the projected population and upon the proportion of the working age population who will be looking for work or that will be working. The ratio of working age population to the number of people in the labor force is called the labor force participation rate. Over the last thirty years there has been a decrease in the participation rate among men and an increase in the participation rate for women. These trends are expected to continue.

For the nation as a whole, the labor force participation rates for men aged 16 to 19 and 20 to 24 have not changed much during the past fifteen years. The Wisconsin rates in 1980 were at or above the 1950 rates. With fewer people in these younger age groups, there should be more competition among employers attempting to fill the kinds of jobs that traditionally employ young people. The increased availability of these jobs and increasing costs for education may cause the labor force participation rates of students to rise, but little overall change is projected. Figure 1 depicts labor force participation rates for males ages 16 to 24 during 1948 to 1985 in the U.S.

FIGURE 1

U.S. LABOR FORCE PARTICIPATION RATES FOR MALES AGED 16–24 YEARS

1948 – 1985



The labor force participation rates for men ages 25 to 54 have been decreasing since the late 1950s. The decrease in participation rates for men aged 45 to 54 has been significant for Wisconsin as well as for the United States. The Bureau of Labor Market Information expects that these trends will continue. Figure 2 depicts labor force participation rates for males ages 25 to 54 during 1948 to 1985 in U.S.

Over the last thirty years the labor force participation rates for men aged 55 and over have declined dramatically. In 1950 over 40.0% of the men age 65 and over were in the labor force. The best estimate for 1985 is that about 15.0% of all men age 65 and older were in the labor force. Much of this decline can be attributed to increased availability and adequacy of pension and retirement benefits. Improvements in overall health and longevity of older persons in our society have also contributed to this decline. In addition, some would be older workers lost their jobs and left the work force involuntarily as part of the process of economic restructuring occurring not just in Wisconsin, but in the country as a whole. This decline is projected to continue, partly because of the pressure from the younger workers seeking to move into the jobs held by older workers and partly because older workers still tend to be concentrated in industries and occupations which are shrinking. Figure 3, on the next page, depicts labor force participation among men ages 55 years and older in the U.S. from 1948 through 1985.

FIGURE 2

U.S. LABOR FORCE PARTICIPATION RATES FOR MALES AGED 25–54 YEARS

1948 – 1985

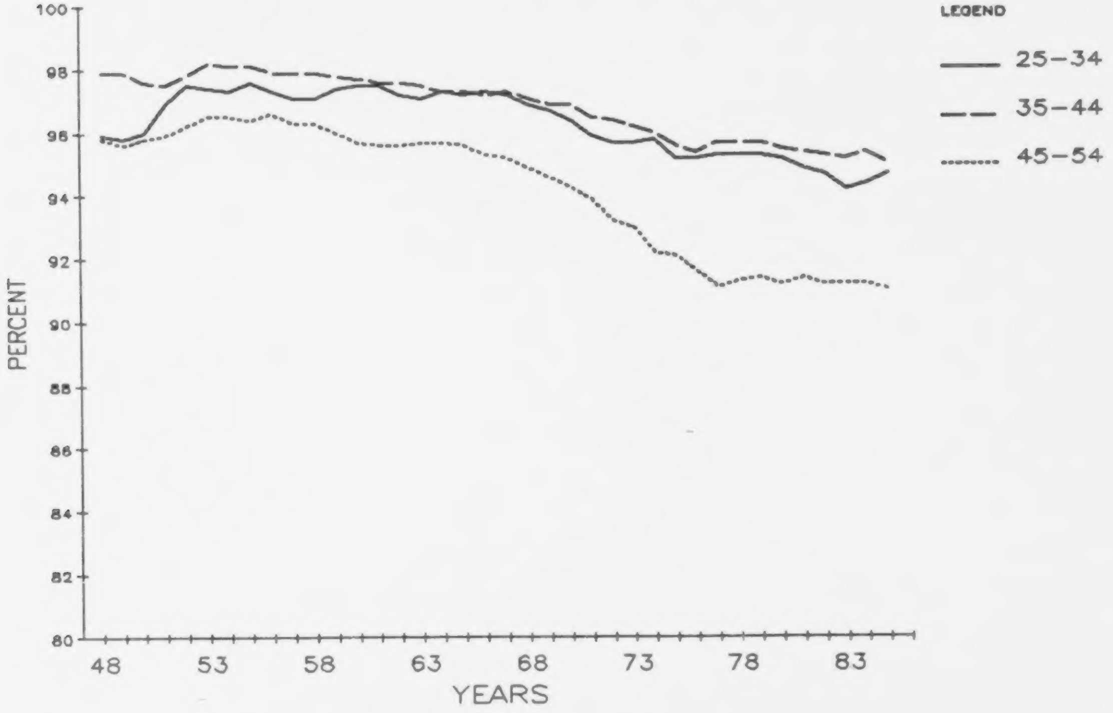
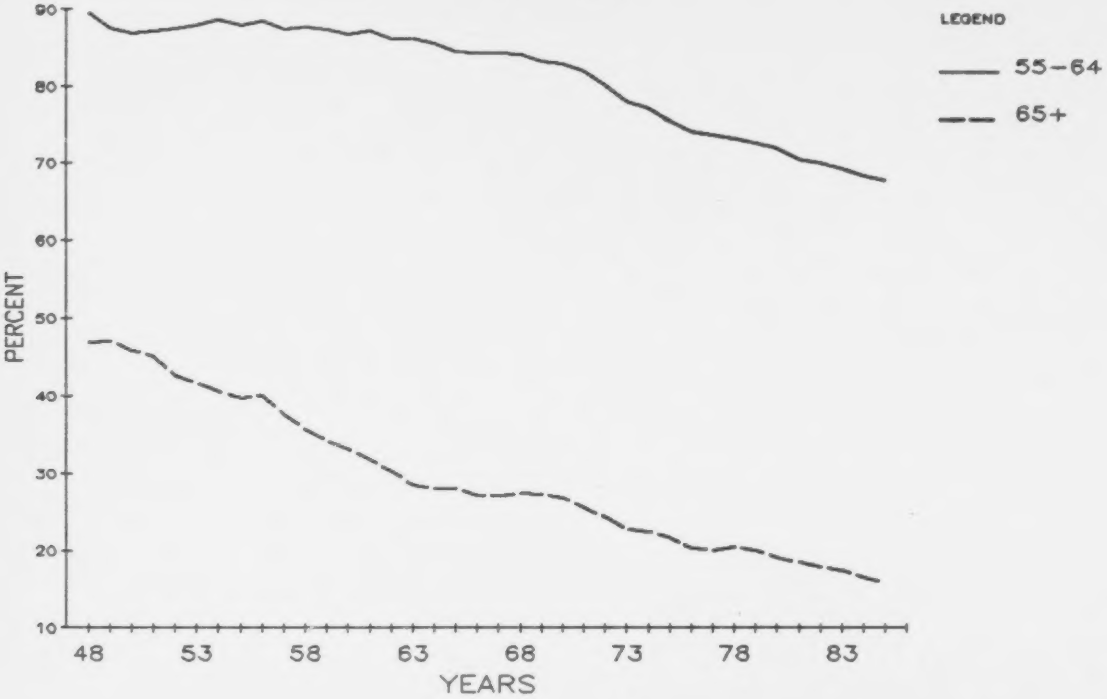


FIGURE 3
U.S. LABOR FORCE PARTICIPATION
RATES FOR MALES AGED 55 – 65+ YEARS
1948 – 1985



The national labor force participation rate for women ages 16 to 19 was about 53.0% in 1980 and 52.0% in 1985. The U.S. Bureau of Labor Statistics projects a small decline to 51.0% by 1995. The Wisconsin participation rate was about 55.0% in 1980. An increase in participation by women in this younger age group is expected due to the continued availability of part-time jobs for students and the decline in the number of young people available to fill these jobs. The labor force participation rate for women 20 to 24 years old has been increasing since about 1960 and is expected to continue to increase in the future.

The labor force participation rate of women aged 25 to 54 has been increasing and will continue to increase. The rate of increase for women ages 25 to 34 moved slowly until almost 40.0% were in the labor market. When nearly half of these women were working, paid participation in the labor force by mothers of young children became much more socially acceptable. Moreover, improvements in fertility control, advances in educational attainment, and efforts to mitigate gender-based discrimination in the workplace coincided in the late sixties, resulting in labor force participation rates increasing rapidly for all working-aged women. As these working women age and as others, who are not working because they are caring for young children, enter the labor force, continued increases in the participation rates of women ages 35 to 54 are expected. Figures 4 and 5, on the next page, portrays women's labor force participation in the 16 to 24 and 25 to 54 age groups in the U.S. during 1948-1985.

FIGURE 4

U.S. LABOR FORCE PARTICIPATION RATES FOR FEMALES AGED 16 – 24 YEARS

1948 – 1985

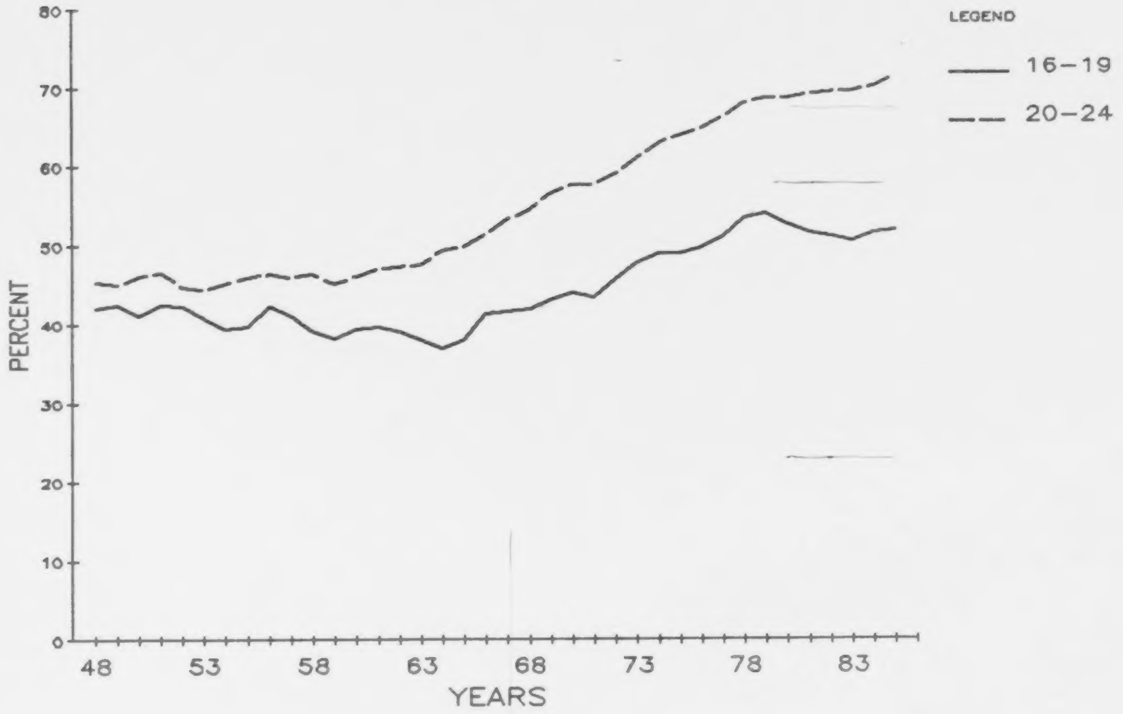
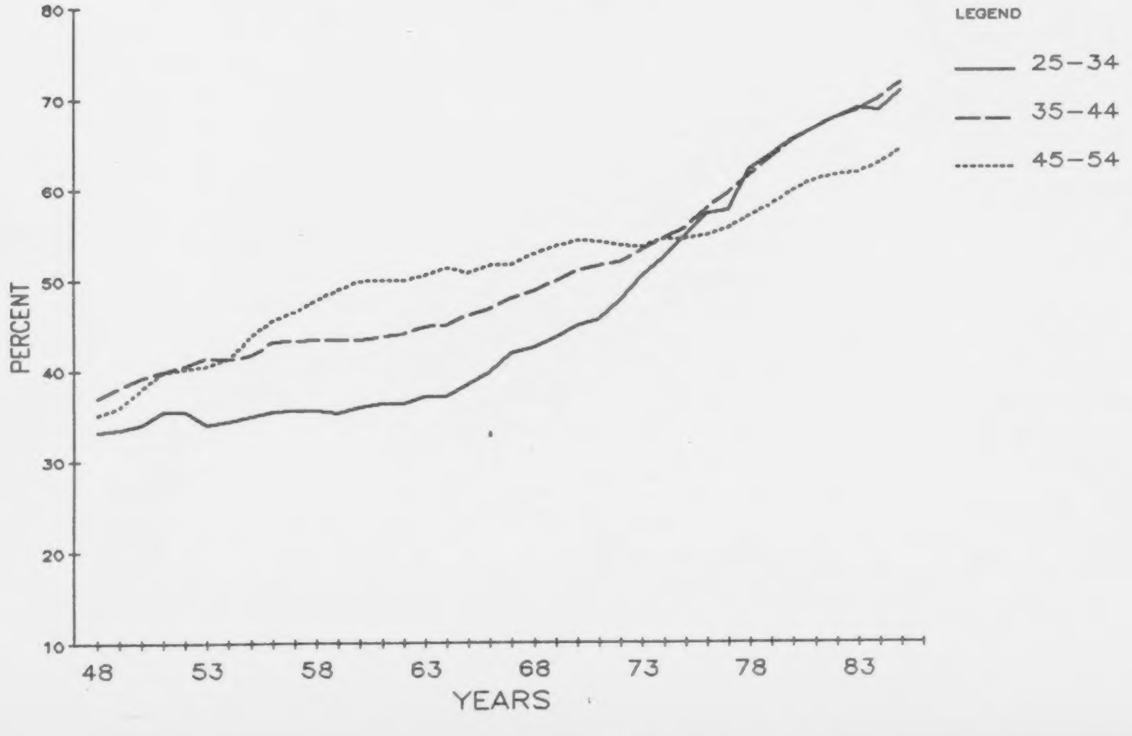


FIGURE 5

U.S. LABOR FORCE PARTICIPATION RATES FOR FEMALES AGED 25–54 YEARS

1948 – 1985

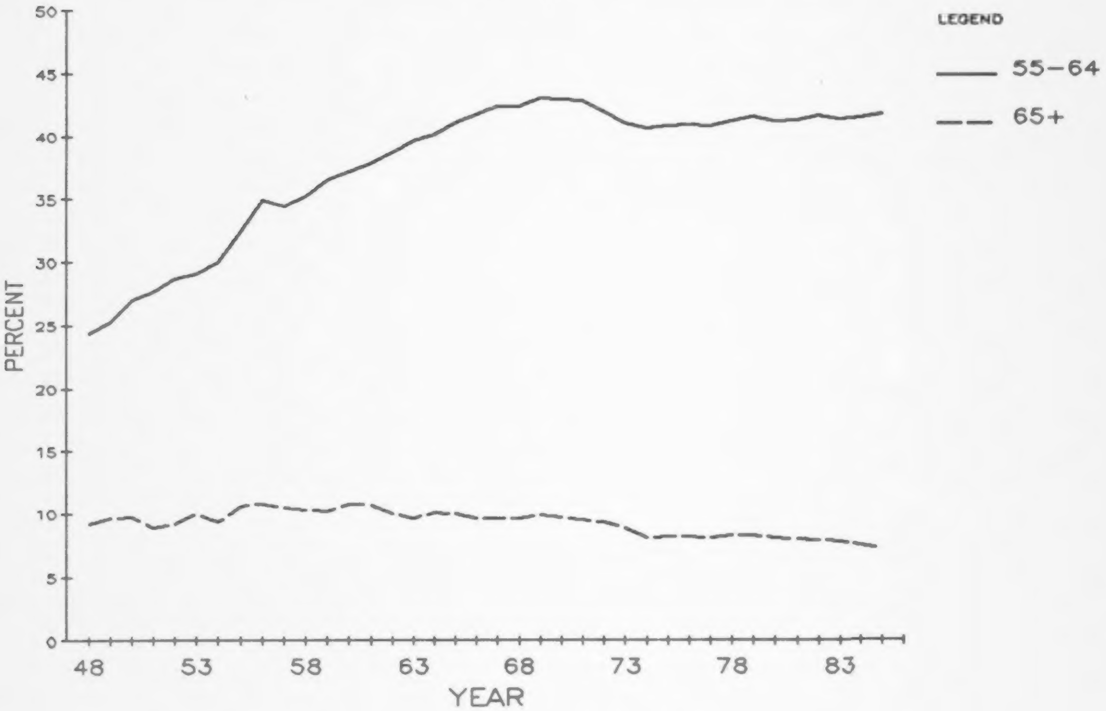


The labor force participation rate for women ages 55 to 64 seems to be leveling off. As more younger women with longer histories of labor force attachment reach the 55 to 64 age group, labor force participation rates for this group might increase as more of them choose to continue with their careers. Alternatively, because these younger groups of women with their longer work histories are more likely to have accumulated greater pension and retirement benefits than are women in this age group today, labor force participation by this age group might decline. The labor force participation rate for women age 65 and over is roughly half the rate for men. There are, however, almost as many women working as men in this age group because there are more women than men in this age group. Figure 6, below, depicts labor force participation among women who were 55 years of age and older in the U.S. from 1948 through 1985.

FIGURE 6

U.S. LABOR FORCE PARTICIPATION RATES FOR FEMALES AGED 55–65+ YEARS

1948 – 1985



3. Employment and Unemployment Estimates

A number of factors affect the size of Wisconsin's labor force. Although the base size of the state's population puts provides the major constraint, the overall performance of the state's economy as reflected by the number of available jobs is the most important determinant of the demand for labor, movements of people will also affect Wisconsin's economic growth. These movements include migration in to or out of the state. If it is relatively easy to obtain good jobs in the state, more people will are likely to stay in the state or to move here from other states to seek work.

Not all people who enter the labor force who seek work find it. Both the size of the labor force and the number of people who are unemployed depend upon prevailing economic conditions both in the state and in other parts of the country. In reviewing estimates of the labor force, one of the issues participants in the projections process addressed concerned the expected levels of employment and unemployment in the state.

If the proportion of women in Wisconsin's labor force continues to grow at the same rate as it has over the past twenty-five years and if the proportion of men in the labor force continues to decline at its current rate, the labor force would grow more rapidly than expected, and the number of unemployed workers in the state could be expected to remain at about the same level as in 1987. We estimate that under these conditions, the ranks of the unemployed would number about 160,200 with an expected average unemployment rate of 6.4% per year by 1990. Moreover, if these changes in behavior persist, the number of people seeking work who would be unable to find it would continue to rise to 206,000, resulting in an expected average unemployment rate of 8.0% per year by 1995.

If the increase in labor force participation by women and the decrease in participation by men slow down, the labor force would grow more slowly than expected, and the number of unemployed workers in the state could be expected to fall by about 50,000 to 110,100, resulting in an expected average unemployment rate of 4.5% per year by 1990. Moreover, these changes would result in unemployment continuing to fall to 107,700, resulting in an expected average unemployment rate of 4.2% per year by 1995.

CHAPTER IV

LABOR DEMAND

A. Introduction

Estimates of current and projected employment by industry and occupation provide information to business planners, policymakers, managers of employment and training programs, educational planners and job seekers to assist in making decisions. Each of these groups not only needs to know what kinds of jobs are currently available in the state, but also needs estimates of future occupational demand to evaluate investment or policy alternatives. Educators and students, for example, need data on occupational outlooks to make sound decisions about programs of study. Managers of job training and retraining programs need employment projections to identify, design and implement appropriate curricula. Policymakers need information on industrial and occupational outlooks to evaluate alternative strategies for economic development. Similarly, business planners need the information to evaluate alternative business opportunities.

This chapter assembles in one document labor force, industrial and occupational projections for the state of Wisconsin. To aid the reader in understanding and interpreting these projections, the chapter also includes information on the views of economists and planners about expected changes in individual industries over the next ten years.

Creating the industrial and occupational projections is a complex and time consuming task. It begins with the assembling of data about the state's population, labor force participation and estimates of industry employment and occupational staffing patterns. This data comes from a variety of surveys and administrative data collection efforts conducted by the Wisconsin Department of Industry, Labor and Human Relations (DILHR) and the Wisconsin Department of Administration. Analyses of this data provide the Bureau of Labor Market Information in DILHR with estimates of current conditions and historical trends. Analysts in the Bureau of Labor Market Information use these estimates to develop labor force and industrial projections for the state. A panel of economists and business planners familiar with Wisconsin's economy review the projections and the Bureau staff then develop occupational projections based on a best estimate about economic conditions and expected growth in the state. A detailed explanation of the projections process is found in Appendix A.

The number and kinds of workers needed in Wisconsin in 1995 will depend on the interplay of demographic, economic, social and technological factors which shape the state's economy. Changes in these factors affect both the demand for goods and services and the supply of those looking for work. Changes in educational attainment, potential earning power and family structure, for instance, have profoundly changed the number of women seeking paid employment over the last twenty-five years and will continue to change the makeup of the labor force over the next several decades as well. Moreover, some occupations will grow much faster than others as the demand for the goods and services they produce increases. Other occupations will decline in importance or even disappear as the adoption of new technologies changes the way in which goods and services are produced, sold and distributed. In addition, global changes in the economy and in national economic policy can all be expected to play a role in determining the future demand for labor in Wisconsin.

Labor force projections depend upon the projected population and upon the proportion of the working age population that will be looking for work or working. This proportion is called the labor force participation rate. Over the last thirty years there has been a decrease in the participation rate among men and an increase in the participation rate for women. These trends are expected to continue. Table 1, below, depicts labor force participation rates in Wisconsin from 1970 to 1985 and shows their projected estimates through 1995.

TABLE 1

LABOR FORCE PARTICIPATION RATES IN WISCONSIN

(Rate as a percentage of population)

Sex/ Age	1970	1980	1985	1990	1995
Male					
16-19	51.4	58.0	57.4	56.7	56.7
20-24	80.0	84.1	84.7	85.3	85.7
25-35	95.3	94.5	94.2	93.9	93.5
35-44	96.4	95.9	95.6	95.2	94.8
45-54	94.7	93.3	92.8	92.3	91.7
55-64	84.0	75.5	70.1	64.7	61.5
65 +	25.2	17.8	15.1	12.4	10.6
Female					
16-19	41.9	54.6	55.1	55.6	58.1
20-24	59.6	72.4	73.9	75.3	79.6
25-35	44.2	67.1	71.4	75.7	84.8
35-44	50.7	68.5	71.4	74.2	80.8
45-54	54.3	63.3	69.1	74.8	78.5
55-64	44.6	44.9	45.4	45.9	47.4
65 +	10.6	7.8	7.3	6.8	6.4

Sources: DILHR Bureau of Labor Market Information for 1985-95;
U.S. Census Bureau for 1970-80.

B. Labor Force Projections

Changes in the size and composition of Wisconsin's labor force over the next ten years will depend not only on changes in the age distribution of the state's population and in its residents' desire to seek paid employment, but also in their ability to find it. Growth in the overall economy of the state will draw more current residents into the labor force. Similarly, if the state's economy outperforms those of other states, Wisconsin's labor force could attract larger numbers of immigrants than are currently expected. Conversely, if the state's economy performs worse than is expected, fewer people will be likely to enter the labor force or to seek work actively if unemployed, while others would be more likely to leave through early retirement or to migrate to other parts of the country.

The unusually rapid growth of the state's labor force between 1970 and 1980, for example, occurred as persons born during the baby boom left school and began seeking work. Table 2, below, depicts civilian labor force estimates for Wisconsin during 1970-85 and the projected estimates for 1990-95. An expanding economy in the state during much of this period provided jobs for an ever-increasing pool of participants, as the labor force grew by a rapid 2.6% per year. Not surprisingly, as the overall number of people seeking work grew, not all were able to find it. During this period women accounted for three out of every five new entrants to the labor market as expanded opportunities to work, coupled with their increasing educational attainment, control over their fertility and anti-discrimination efforts combined to encourage women of all ages to enter or reenter the work force.

TABLE 2

CIVILIAN LABOR FORCE ESTIMATES FOR WISCONSIN:1970 - 1995

Sex/ Age	1970	1980	1985	1990	1995
MALE	1,108,584	1,299,091	1,334,044	1,364,387	1,398,423
16-19	88,395	109,378	88,820	77,100	79,388
20-24	121,948	188,590	188,502	158,674	141,128
25-35	237,453	356,039	390,248	408,013	377,478
35-44	224,841	238,927	287,068	345,404	387,786
45-54	219,116	208,203	197,181	216,227	265,965
55-64	164,706	156,363	144,470	126,010	117,385
65 +	52,125	41,591	37,756	32,960	29,293
FEMALE	665,424	961,927	1,033,209	1,104,551	1,222,293
16-19	72,177	100,844	82,149	72,626	77,734
20-24	106,167	163,459	162,380	136,042	126,926
25-34	112,685	250,451	294,943	327,386	335,013
35-44	120,577	173,177	215,166	267,159	330,187
45-54	131,940	145,448	150,901	178,910	229,697
55-64	93,605	102,767	101,229	95,930	96,673
65 +	28,273	25,781	26,441	26,498	26,061
TOTAL:	1,774,008	2,261,018	2,367,253	2,468,938	2,620,716

Sources: DILHR Bureau of Labor Market Information Projections;
U.S. Census Bureau for 1970-80.

Between 1980 and 1985 Wisconsin's labor force grew more slowly than in the preceding ten years. A period of economic recession with its attendant high employment and a drop in the size of the pool of new entrants combined to produce labor force grow of slightly less than 1.0% per year for the population as a whole. Women still continued to enter the labor force in record numbers during this period, but the number of men entering the labor market during this period grew by only about 0.5%. Net outmigration accounted for some of the slow growth. Not only were more workers from Wisconsin seeking employment elsewhere, but news of a downturn in the manufacturing sector of the state's economy led fewer people than normal from other states to seek work in Wisconsin.

The Wisconsin Bureau of Labor Market Information projects that the state's labor force will continue to grow by slightly less than 1.0% per year between 1985 and 1990. Given the shrinking pool of new entrants to the labor force as more people born during the baby bust begin to seek paid work, sustaining even this slower rate of labor force expansion will require a smaller net out migration of workers. Our projections for 1990 assume that the improved economic conditions in the state will result in the level of net out migration from the state falling to about one-quarter of that occurring between 1980 and 1985. Moreover, we expect that the number of women in the labor force will continue to grow about three times faster than will the number of men. In fact, we expect that women seeking work in the state's labor market will account for about 70% of this increase in the labor force.

Our projections for the period from 1990 to 1995 assume that the rate of labor force growth in the state will increase to about 1.2% per year. These projections assume that relative economic conditions in the state will improve to the point that no net outmigration from the state will occur during the period. We expect that the number of women in the labor force will grow about four times faster than the number of men. As a consequence, by 1995 women will account for about 80% of the growth in the labor force and for about 47% of the state's total labor force.

Labor force projections, depend on economic conditions in the state as well as the characteristics, preferences and behavior of individuals seeking working. Due to the uncertainty of all these factors, projections of the size and composition of the labor force are, at best, only an estimate. In 1990, we expect the a total labor force in the state of about 2,468,900 is expected. Reasonable changes in the underlying assumptions about labor force participation rates and net migration indicate that the actual size of Wisconsin's labor force will be between 2,444,700 and 2,494,800 by 1990. Similarly, while the 1995 labor force is expected to total about 2,620,700, it will most likely lie between 2,573,800 and 2,672,100.

To reach the estimated projections, the state's labor force will have to grow by between 15,500 and 25,500 workers per year between 1985 and 1990 and by between 20,000 and 35,000 workers per year between 1990 and 1995. As noted above, the underlying rates of job creation would be much smaller than those experienced over the ten years between 1970 and 1980 when the state's labor force absorbed an average of 48,700 new entrants each year. Instead. the rate of growth in the labor force will most likely resemble that of the fifties and the sixties when 20,000 to 30,000 new workers entered the labor market each year, though the mix of new entrants will contain many more women than men.

C. Industry Employment Trends in Wisconsin

Total employment in Wisconsin is expected to increase by 235,000 jobs in the non-farm wage and salary portion of the labor force between 1985 and 1995. Employment in this portion of the labor force averaged 1,976,800 in 1985 and is expected to grow to 2,094,900 by 1990 and to 2,212,200 by 1995. Job growth at this level would constitute a nearly 12% increase over the decade, or an increase of about 1.1% in the number of jobs in the non-farm wage and salary sector each year. This projected rate of job growth for the decade is two to three times faster than that experienced between 1980 and 1985, but would be only half the rate at which jobs have been added to the state's economy between 1960 and 1985.

Job growth in the state's economy varies greatly with the business cycle. The state's economy is currently in the expansionary phase of the most recent business cycle. By the end of 1986, non-farm wage and salary employment had advanced by 150,100 jobs since the low point of the last recession in 1983 for an overall increase of 8.0% from the annual average employment in 1983 to 1986. The annual average rate of job growth over this period average 2.6%. The pace of growth in Wisconsin's non-farm wage and salary employment actually increased in 1986, with the addition of 31,800 new jobs since 1985. Similar gains in 1985 added 27,600 new jobs over the 1984 level. Gains in both years were concentrated in the service-providing sector.

All of the major industrial groupings have added new jobs during the current expansion. Finance, insurance and real estate, service, trade and construction have experienced the most rapid gains, adding new jobs at an average annual rate of about 3.0% to 4.0% per year. Expansion in the trade and service categories each accounted for about three out of every ten new jobs in Wisconsin between 1983 and 1986. Expansion in manufacturing employment has accounted for about one out of every five new jobs during this current economic recovery.

The Bureau of Labor Market Information expects non-farm wage and salary employment to continue to grow in all major industry groupings in the state's economy. In 1985, about one-third of all jobs were in the goods-producing sector of the economy and two-thirds were in the service-providing sector. By 1995, employment in the goods producing sector of the state's economy is expected to drop to one-quarter of total employment. Nearly three out of every four workers in the state will be employed in some facet of the service sector.

Rates of growth in all major industrial groups are expected to remain the same or to fall slightly over the next ten years. Manufacturing is expected to continue adding new workers through the mid-1990s, but at a much slower rate than any of the service sector groups except transportation, communications and public utilities. Most new jobs will continue to come from expansion in trade and services.

1. Manufacturing Employment

The manufacturing sector of Wisconsin's employment was hard hit by the economic recessions of the early 1980s. Non-farm wage and salary employment in manufacturing bottomed out in 1983 with an annual average of 484,100 jobs, down about 107,200 jobs from 1979's peak year of 591,300. Manufacturing employment levels reached 513,900 in 1985. Current estimates for 1986 place annual average employment in manufacturing in the state slightly lower at 512,500.

In the first two years of the recovery, in the nation as a whole, output and employment levels both rose sharply, while in the last two years output has edged up only slightly. Manufacturing employment levels have dropped significantly nationwide during this period, indicating substantial gains in productivity. This sharp gain in productivity, with little gain in output, has resulted from a painful process of cost cutting. While some industries have improved their financial health by this process, some continue to have substantial losses and are forced to reduce employment levels by any means possible. This is particularly true for the durable goods industries.

Major industries in Wisconsin which have been affected by this problem have been limited to makers of farm, construction and mining machinery, automobiles and automobile parts and other manufacturers of fabricated metal products, nonelectrical machinery and transportation equipment. Together, these industries employed 184,200 workers in 1985, or a little over one-third of all manufacturing employment in the state. These three industries have not participated in the recent economic recovery to the same extent as most other industries in the manufacturing sector. Employers in these industries will remain under competitive pressure to cut more workers from their employment rolls and to institute other possible means of cutting costs to remain in business.

Another third of Wisconsin's manufacturing employment is concentrated in four major industry groups: food processing and kindred products, paper and allied products, printing and publishing, and rubber and miscellaneous plastics. None of these industries has been subject to extensive foreign or outstate domestic competition, and all are reasonably healthy financially. Unfortunately, there has been limited employment growth overall in these industries. Productivity gains in these industries have resulted more from increased efficiencies of production than from growth in volume of output. Employment in these industries has increased for some firms and has increased slightly overall.

Industry leaders and observers are in general agreement that the conditions of the latest two years, rather than those of the recovery period, are likely to continue into the foreseeable future. Thus, any significant job growth that Wisconsin will experience over the next few years is not expected to come from manufacturing industries as a whole.

2. Service and Miscellaneous Employment

One of the major components of the service-providing sector, upon which Wisconsin is highly dependent for additional jobs in the future, is the service and miscellaneous industry growth. (Almost no one expects much growth from the goods-producing sector.) Continued growth in service and miscellaneous industry employment levels, which is forecast by all or nearly all analysts, is dependent on factors such as population growth, our ability to provide services for outstate users, growth in personal income levels and increases in the State's general standard of living.

During the most recent year (1986), gains in the level of service and miscellaneous employment continued at the pace they have averaged in the first half of the decade. This gain was about three-fourths that of the national rate of increase. Service employment in Wisconsin is slightly below (7.5%) the State's proportionate share of the nation's total, and, in the most recent year, Wisconsin's employment growth (3.4%) was only about 70% as rapid as the nation's growth rate. While a number of factors account for this slightly smaller improvement, one of the most significant would be location. The larger metropolitan centers (Chicago and the Twin Cities) just outside our borders provide some of the services that otherwise would be provided by in-state firms.

The two largest service sub-groups, medical (155,000 jobs) and business services (70,000 jobs), reveal different shares and short-term changes. Over the year, business services employment gained at the national rate, but Wisconsin has only 70% of its proportionate share of national employment. In contrast, medical services employment levels increased at only two-thirds the U.S. pace in 1986, while it employs 16% more than its proportionate share of workers.

3. Trade (Retail and Wholesale) Employment

Wisconsin's trade industries group continued the steady growth experienced in recent years, although several major subgroups provided no employment growth. Growth in Wisconsin's trade employment level occurred at about three-fourths the national rate of increase. The high-paying wholesale trade portion and the general merchandise group experienced a very slight gain and no gain, respectively, while most of this year's employment gain occurred in eating and drinking establishments. Other creators of significant numbers of additional jobs include automobile dealers, service stations and the miscellaneous retailing group.

Employment growth sluggishness in the two large subgroups within the trade grouping renews the concern of some analysts that employment growth may be topping out in this large employment category. Growth in this industry has exceeded population growth for a number of years; and, together with the concern that consumers are over-extended financially, the possibility exists that trade will find it increasingly difficult to continue its long upward trend.

4. Finance, Insurance and Real Estate Employment

Riding the crest of the "great bull market," state and national employment levels in this category have risen at a faster rate than non-farm payroll employment overall. Finance and insurance services offered have increased in recent years, while the "baby boomers" have become adults, requiring their own residences, bank accounts and insurance policies. Increasing workload from these activities has resulted in significant gains in employment in this industry grouping. Thus, for 1986, Wisconsin's employment growth has been rapid at 3.9%. Rapid as it may have been, Wisconsin's growth rate has been only about 70% of the U.S. rate, which was 6.0%. Will these workload and job gains continue through 1987 and beyond? Most forecasters think they will, but a minority of analysts suggest that a slowdown is possible.

These analysts suggest limits to growth will occur from such diverse forces as: electronic transfer of funds, the growth of interstate banking, the aging of the baby boom beyond first-time home buyers, slow growth in "real" personal income, and the aging of the bull market. The analysts also say that future growth must be discounted to some extent by the rapid growth that has already occurred.

5. Transportation, Communication and Public Utilities Employment

Employment in this industry grouping increased by 5.0% in 1985 and 2.0% in 1984 but overall has gained only 0.8% since 1979, the last pre-recession year. In 1986 it declined by 1.4% or 1,300 jobs. Declines occurred in the communications industry, which is feeling the effects of deregulation and in motor transportation. Utilities increased employment by 1.3%, about 200 workers in 1986.

While the rising demand for telecommunication services continues, so do extensive productivity improvements, which reduces employment gains as well as costs. Continued cost reductions, in turn, maintain growth in demand for additional or new types of service, which results in additional workload and employment needs.

Transportation service activity is predominantly motor freight transportation service in Wisconsin. Activity in motor freight reflects the pace of general economic activity as well as motor freight's competitiveness with other transportation alternatives (air, rail, water). Deregulation has improved efficiencies for all types of transportation. This directly limits employment growth but indirectly aids industry's overall efficiency, which in turn helps maintain or gain additional work. Thus, future employment gains stem from the state's and the nation's general competitiveness in the long run.

Public utilities continue to be a capital intensive industry. Employment levels in this industry continue to be affected mostly by the general level of economic activity and population growth. Public utilities have become an export industry. While only on a minor scale thus far, Wisconsin is now selling electricity to Illinois users. This trend is expected to increase over time.

6. Construction Employment

The level of construction employment increased by 10.8% in 1985. In 1986 it was about 800 workers or 1.2% behind 1985's level. Lower interest rates and tax incentives have spurred construction activities of all types during 1986. Tax incentives have now been restricted, and the one-time gain from lower interest rates is largely over. Construction activity and employment levels will face more obstacles in future years, as overbuilding in office, retail and multi-family housing units is evident. While most of the analysts see construction employment levels rising, long-term future gains beyond population increases will become increasingly difficult.

7. Government Employment

Government employment continues to be the fourth largest employment group in Wisconsin. Growth in the employment level has averaged 0.7% a year since

1979. In 1986 government job levels were about 4,600 above year-earlier levels. While employment gains will continue to be limited by budgetary constraints, modest increases in the primary school-age population will raise employment in the education portion of local government during the next decade.

8. Mining Employment

Employment levels in mining averaged 2,000 jobs in 1986, up 100 over 1985. This compares to the 1979 level of 2,600. Sand and gravel quarrying remains the dominant type of activity and is generally dependent on the level of construction activity for its existence. Metal mining is not occurring in the state despite years of preparation. World prices for metals will determine activity in potentially extractible metals located in the state.

D. Industry Employment Projections To 1995

Through the employment projections process described in Appendix A, the following tables of employment projections were derived. Table 3 depicts non-farm wage and salary employment projections to 1990 and 1995 by two-digit SIC industry code. A brief industry-by-industry analysis of the employment projections follows here.

The service industry, with its high proportion of part-time workers, led the industrial groups in the projections to 1995, while the projection for mining has shown a decline of 9.1%. Among the subsectors of manufacturing, textile mill products lead the decreases with 21.4% and professional, scientific and control instruments lead the gains.

Mining activity in Wisconsin is found, for the most part, in sand and gravel pits. This industry's employment is expected to remain level through 1995. Low interest rates should cause increased construction employment in the short run, but increased efficiency will cause a greater number of prebuilt modules to be used, causing less and less on-site employment. The employment projections vary to 1995, and are largely dependent upon whether or not construction is in a boom or bust in a particular year.

The transportation, communications and public utilities industry groups were assembled, because of the similarity of these segments in being regulated. Through the present administration, many regulations have been lifted. The airlines have grown with competition, but there have been losses and mergers in this transition. Trucking is expected to grow moderately, while telecommunications is expecting new products and processes to enhance communication through laser and fiber optics.

In trade industries, computerization is making retail trade employees more efficient, but their number continues to increase as part-time workers, who in many cases are teenagers and secondary income workers, hold these positions. The passing of the baby boom into its thirties, with fewer children coming behind them, makes trade expansion selective in new directions.

Under the finance, insurance and real estate industries, the brokerage, investment and insurance firms are finding more innovative methods to deal with the increasing amount of consumers' disposable income and are increasing their employment. But the majority of the projectors believed that this growth will slow to 1995, as computers increase the efficiency of operations.

The Governmental sector employment has declined from 1980 to 1984, with 1985 moving up very slightly. During 1986, two sectors of government, federal and state, moved up slightly, while local government declined in employment. Our panel sees government services increasing to 1995 but at a slower rate than in the past.

Manufacturing employment numbers have been mercurial in their movements in the past, and the projectors were not unified in their outlook for manufacturing into the 1990s. Durable goods manufacturing represents the majority of Wisconsin manufacturing and drives the total manufacturing numbers to a much greater extent than the nondurable goods sector.

Lumber and wood products employment moves synchronously with the housing industry. The high projections do not vary from the mean as greatly as the low projections. This shows that selected economists expect a real drop in lumber and wood products employment. The average projection shows lumber and wood products employment to be level to 1995. The average of the projections for the furniture and fixtures industry shows a slight downturn to 1995, but in the past this industry has been very volatile, so the path to 1995 may be interspersed with major movements up and down. This can be seen by the fact that the highest and lowest three projections vary greatly from the mean.

The concrete, gypsum and plaster subsector of this industry is largely related to the construction industry, which seems to be holding its level from 1984-1985. This volatile industry has been relatively level for the last four years, and the average projector sees it remaining flat.

Equipment for construction, agriculture and mining are the products of the primary metal industry, and since 1980 employment in this industry has not rebounded, so equipment needs have been low. The average projection to 1995 does not show this industry returning to its 1979 high. Fabricated structural metal and metal stampings are two major components of this industry. This major sector of durable goods manufacturing plummeted from 1980 to 1983 and the major sectors of engines and turbines, farm equipment and metalworking machinery have yet to follow up on the increases shown in 1984.

The auto industry in the state operates in a national market which is attempting to become more automated, as it competes with lower cost foreign labor. An increase in auto industry employment will come about in early 1987 as Chrysler Corporation moves into the state. One "high tech" and mostly low paying industry, instrument manufacturing, has been growing dramatically since 1962. Manufacturing of engineering, laboratory, scientific, research, optical and surgical instruments

TABLE 3

WISCONSIN INDUSTRIAL EMPLOYMENT PROJECTIONS
(IN THOUSANDS)

Employment by Standard Industrial Groups	1985	Projections to 1990:			Projections to 1995:		
		High	Average	Low	High	Average	Low
Nonfarm Wage & Salary Emp.	1,976.8	2,201.8	2,094.9	1,987.9	2,402.9	2,212.2	1,992.5
Manufacturing	514.8	569.5	531.1	485.5	609.8	544.5	466.2
Durable Goods	315.4	354.1	329.2	299.4	382.8	339.4	285.0
24 Lumber & Wood Products	22.6	23.3	22.1	19.5	24.4	22.5	19.4
25 Furniture & Fixtures	9.8	10.1	9.6	9.1	11.1	9.5	6.5
32 Stone, Clay, & Glass	7.8	8.5	8.0	7.1	9.3	8.0	6.0
33 Primary Metal Industries	19.3	20.7	19.2	17.6	22.0	18.7	15.3
34 Fabricated Metal Products	51.4	58.1	53.7	49.3	64.3	56.7	48.3
35 Nonelectrical Machinery	100.1	115.9	107.0	97.3	123.2	112.3	97.7
36 Electrical Machinery	50.1	55.9	52.7	48.9	61.5	54.8	48.5
37 Transportation Equipment	32.8	37.1	34.5	29.8	40.9	33.6	23.0
38 Prof., Sci., & Contl Instr.	11.4	13.7	12.4	11.5	15.1	13.3	11.8
39 Misc. Manufacturing Ind.	10.1	10.8	10.0	9.3	11.0	10.0	8.5
NONDURABLE GOODS MFG	199.4	215.4	201.9	187.1	227.0	205.1	181.2
20 Food & Kindred Products	62.5	63.7	62.0	59.1	65.7	61.5	56.4
22 Textile Mill Products	4.2	4.1	3.9	3.5	4.0	3.3	2.4
23 Apprl & Oth. Finished Prod.	6.3	6.3	6.0	5.7	6.2	5.7	5.0
26 Paper & Allied Products	48.1	50.8	47.2	42.0	53.0	48.1	41.3
27 Printing and Publishing	38.2	46.5	41.8	38.7	49.9	44.5	39.7
28 Chemical & Allied Products	10.0	10.6	10.0	9.5	11.1	10.1	8.8
30 Rubber & Misc. Plastics	22.6	25.8	23.9	22.3	29.4	25.7	22.2
31 Leather & Leathr Products	7.3	7.1	6.7	6.0	7.2	5.8	5.1
Other Nondurable Goods	0.3	0.5	0.4	0.3	0.5	0.4	0.3
10-14 Mining	2.2	2.4	2.0	1.8	2.6	2.0	1.5
15-17 Construction	62.8	69.3	66.4	62.8	74.8	68.5	59.0
40-49 Transp., Comm., Util.	93.7	97.8	95.4	93.3	105.5	99.6	93.1
50-59 Wholesale & Retail Trade	462.5	509.6	497.0	483.4	560.3	529.3	493.9
60-67 Fin., Ins. & Real Estate	104.2	120.7	111.5	100.7	134.1	119.3	99.7
70-89 Service & Miscellaneous	415.2	482.9	459.2	442.1	538.8	503.5	469.1
90-93 Government	321.6	349.6	332.3	318.3	377.0	345.5	310.0

NOTES: HIGH = Arithmetic mean of three highest forecasts
AVERAGE = Arithmetic mean of all forecasts
LOW = Arithmetic mean of three lowest forecasts

Data below industrial division level for 1970 based on 1967 SIC.
Annual average data is based on 1985 benchmark.
Totals may not add due to rounding.

Source: DILHR Bureau of Labor Market Information Projections.

are sold to a national and international market. It is one of two industries with only positive growth projections.

The miscellaneous manufacturing industry formerly contained ordinance and accessories categories and revisions were not made prior to 1975. Since that time the major components have been jewelry, silverware, toys, sporting goods and pens and pencils. Many of the items in this group are disposable-income items, especially for the higher cost items.

Under the non-durable goods manufacturing industries, the textile, leather and apparel products industries are the three small and almost continuously declining industries that tend to pull down this less cyclical portion of manufacturing. The food products' industry group, the major sectors of which are meat and dairy products, is projected to remain flat. The changing nature of the American consumers' diet does not bode well for red meat or products heavy in butterfat, such as cheese or ice cream.

The textile mill product industry, while being a very small component of Wisconsin manufacturing, is projected to get even smaller, as companies move to lower wage areas of the country and the world. The major sector of the textile industry in Wisconsin is the "knitting mills" sector. Large drops follow small rises as this industry has declined almost from the beginning of the data series.

Wisconsin's largest subsector of apparel is mens', youths' and boys' clothing, which includes athletic clothing and winter coats and jackets. Small and declining describe this industry, which is projected to continue to decline. All projectors agree on this decline; the only variation is in the amount.

Disposable paper products have the greatest growth potential for the paper industry, but other market sectors have not shown such strong growth tendencies. Automation will take up product growth, as employment is projected to remain flat.

Computerized desk-top publishing has been the advance that has been said will revolutionize the industry. The "information age," which we are in, may make use of video displays, but the wide distribution of output is accomplished by paper copy. The projectors see the growth rate declining somewhat from the past two years, but the industry is expected to move ahead strongly to 1995.

The growth rate of employment in the manufacture of plastics, drugs, soaps, paints and agricultural chemicals is projected to be flat. The high growth potential of some of these product areas, if it occurs, will likely be taken up by automated manufacturing processes.

The auto and construction markets drive the need for plastics, and, although the demand for autos and houses may be volatile, the percentage of plastics going into these products is constantly increasing. This industry has increased by 277% since 1954.

Footwear is the major component of the leather industry in Wisconsin but many companies have moved their production operations abroad. This trend is projected to continue through 1995.

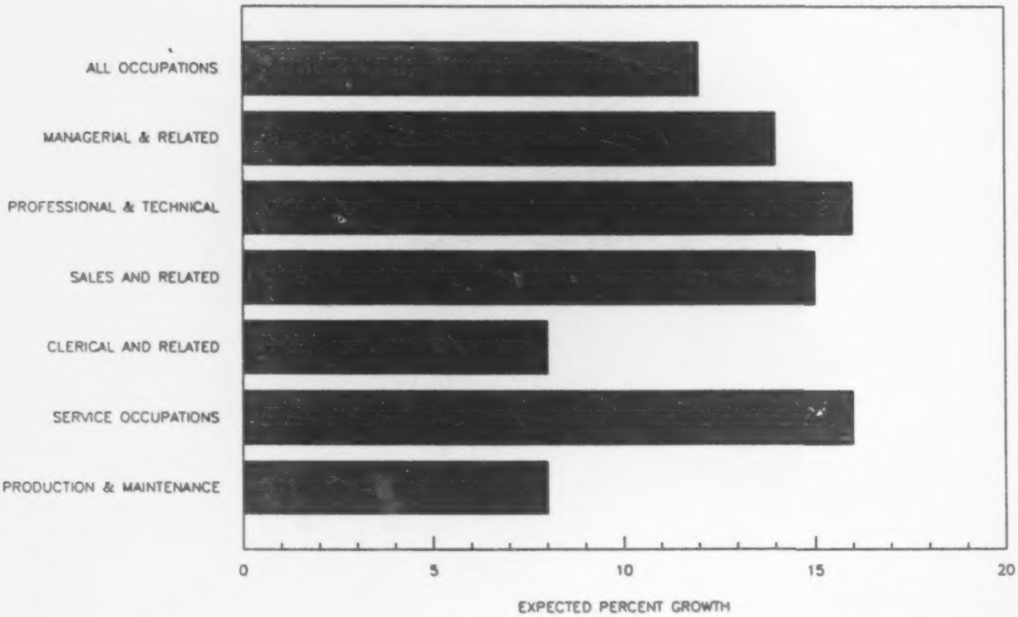
E. Wisconsin Occupational Projections Through 1995

Most new jobs in tomorrow's economy will be found in the Professional, paraprofessional and technical occupations, in service occupations and in production, operatives and maintenance occupations. These categories will be responsible for adding three-quarters of all new jobs to the economy between 1985 and 1995 in roughly equal shares. Employment in clerical and administrative support occupations will add 14% of the new jobs, and 10% increases in employment in managerial and administrative occupations will be responsible for almost all of the remaining job growth. See Figure 1 for a depiction of Wisconsin occupational projections through 1995.

Table 4 depicts Wisconsin's projected employment demand by broad occupational group through 1995. The highest growth rate of the major sectors is projected to occur in professional, paraprofessional and technical occupations and service occupations. Both of these groups employ people with varying amounts of training and for varying amounts of hours. Their increases over 10 years are projected to be 16.0%.

FIGURE 1

WISCONSIN OCCUPATIONAL PROJECTIONS
PERCENT GROWTH BETWEEN 1985 AND 1995



SOURCE: WIS DILHR, PROJECTIONS, 3/87

TABLE 4

NON-AGRICULTURAL WAGE AND SALARY EMPLOYMENT IN WISCONSIN BY OCCUPATIONAL GROUPINGS 1985 PROJECTED TO 1995

OCCUPATION TITLE	ANNUAL AVERAGE EMPLOYMENT 1985	PROJECTED ANNUAL AVERAGE EMPLOYMENT 1995	PROJECTED CHANGE IN EMPLOYMENT 1985-95	PERCENTAGE EMPLOYMENT INCREASE 1985-95	PROJECTED ANNUAL JOB OPENINGS DUE TO GROWTH	PROJECTED ANNUAL JOB OPENINGS DUE TO SEPARATIONS	PROJECTED ANNUAL JOB OPENINGS TOTAL
TOTAL, ALL OCCUPATIONS	1,978,580	2,212,190	233,610	12%	23,390	67,590	90,980
MANAGERIAL & MGT. RELATED OCC.	125,410	142,380	16,970	14%	1,700	5,360	7,060
PROFESSIONAL, PARAPROFESS.,TECH.	366,400	423,620	57,220	16%	5,730	10,460	16,190
MANAGEMENT SUPPORT	21,630	26,160	4,530	21%	450	650	1,110
PURCHASING AGENTS AND BUYERS	7,550	8,410	860	11%	90	330	420
PERSONNEL SPEC. AND RELATED	6,620	7,240	620	9%	60	150	210
OTHER MANAGEMENT SUPPORT	12,520	14,200	1,680	13%	170	320	490
ENGINEERS, ARCHITECTS, SURVEY.	35,260	42,190	6,930	20%	700	840	1,540
NATURAL, COMPUTER, MATH SCI.	8,830	9,740	910	10%	90	160	250
COMPUTER AND MATHEMATICAL	13,310	16,190	2,880	22%	290	100	390
SOCIAL SCIENTISTS, RECR, RELIG	19,410	22,640	3,230	17%	330	870	1,200
LAW AND RELATED	7,680	9,330	1,650	21%	170	500	660
TEACHERS, LIBRAR., COUNSELORS	118,690	129,910	11,220	9%	1,120	3,480	4,610
HEALTH PRACTITIONERS, TECHN.	80,500	97,750	17,250	21%	1,730	2,190	3,920
WRITER, ARTIST, ENTER, ATHLETE	15,930	18,650	2,720	17%	270	550	820
OTHER PROFESS. AND TECHNICAL	18,460	21,200	2,740	15%	270	310	590
SALES & RELATED OCCUPATIONS	191,900	221,500	29,600	15%	2,960	8,260	11,220
CLERICAL & ADMIN. SUPPORT OCC.	325,380	351,720	26,340	8%	2,630	10,090	12,730
SERVICE OCCUPATIONS	343,170	396,990	53,820	16%	5,390	14,750	20,140
AGRICULTURE, FORESTRY, FISHING	14,840	16,770	1,930	13%	190	818	1,010
PRODUCTION, OPER., MAINTENANCE	611,490	659,220	47,730	8%	4,790	17,860	22,650

Source: DILHR: Bureau of Labor Market Information

TABLE 5

OCCUPATIONS WITH THE MOST PROJECTED YEARLY JOB OPENINGS IN WISCONSIN, 1985 THROUGH 1995

PROJECTED STANDARD OCCUPATION CODE	OCCUPATION TITLE	PROJECTED ANNUAL JOB GROWTH	PROJECTED ANNUAL SEPARATIONS	TOTAL ANNUAL OPENINGS
49011261	SALESPERSONS, RETAIL	804	3263	4067
67005376	JANITORS AND CLEANERS, EXC.MAIDS	583	3146	3729
19005016	GENERAL MANAGERS AND TOP EXEC.	668	2292	2960
55347357	GENERAL OFFICE CLERKS	270	1737	2007
49023254	CASHIERS (1)	962	992	1954
55338305	BOOKKEEPING & ACCOUNTING CLERKS	243	1615	1858
65005381	BARTENDERS	541	1283	1824
66008401	NURSING AIDES AND ORDERLIES	539	1266	1805
32502160	REGISTERED NURSES (1)	867	762	1629
65008392	WAITERS AND WAITRESSES	730	609	1339
49021263	STOCK CLERKS, SALES FLOOR	173	1054	1227
65038390	FOOD PREPARATION WORKERS	306	895	1201
49008269	SALES REPS.EXC.SCIENTIF & RETAIL	281	901	1182
67002377	MAIDS AND HOUSEKEEPING CLEANERS	205	873	1078
85132585	MAINTENANCE REPAIRERS, GEN.UTIL.	270	734	1004
31305114	TEACHERS, ELEMENTARY	242	703	945
97102843	TRUCK DRIVERS, HEAVY	217	711	928
63047453	GUARDS AND WATCH GUARDS	102	771	873
21114025	ACCOUNTANTS AND AUDITORS (1)	346	438	784
31308117	TEACHERS, SECONDARY SCHOOL	182	601	783
79014474	GARDENERS AND GROUNDSKEEPERS	127	574	701
65026384	COOKS, RESTAURANT	213	471	684
97105842	TRUCK DRIVERS, LIGHT	194	480	674
81008502	FIRST LINE SUPERV.: PRODUCTION	103	564	667
51002369	FIRST LINE SUPERVISORS, CLERICAL	189	428	617
98902905	HAND PACKERS AND PACKAGERS	150	467	617
41002268	FIRST LINE SUPERVISORS, SALES	148	440	588
87102512	CARPENTERS	111	465	576
65041389	COMB. FOOD PREPARATION, SERVICE	114	442	556
13002015	FINANCIAL MANAGERS	179	365	544
65032387	COOKS, SPECIALTY FAST FOOD	120	408	528
97111838	BUS DRIVERS, SCHOOL	94	431	525
32102159	PHYSICIANS AND SURGEONS	115	399	514
27505101	DIRECTORS,RELIG. ACTIV./EDUC.(1)	92	410	503
68005412	HAIRDRESSERS AND COSMETOLOGISTS	226	274	500

Note: (1) Denotes occurrence in both Tables 5 and 6.

(SOURCE: WIS DILHR, Bureau of Labor Market Information, 1987)

TABLE 6

OCCUPATIONS WITH THE GREATEST PROJECTED PERCENTAGE INCREASE IN EMPLOYMENT IN WISCONSIN, 1985 THROUGH 1995

STANDARD OCCUPATION CODE	OCCUPATION TITLE	PROJECTED % INCREASE IN NO. OF JOBS 1985-95	PROJECTED ANNUAL JOB GROWTH	PROJECTED ANNUAL SEPARATIONS	PROJECTED TOTAL ANNUAL OPENINGS
28305235	PARALEGAL PERSONNEL	48%	329	43	76
25313084	ACTUARIES	43%	113	1	12
22126055	ELECTRICAL & ELECTRONIC ENGINEER	35%	1201	91	211
66005399	MEDICAL ASSISTANTS	35%	773	55	132
25102076	COMPUTER SYSTEMS ANALYSTS, EDP	34%	1414	19	160
24511221	PETROLEUM TECHNICIANS & TECHNOL.	33%	1	0	0
32502160	REGISTERED NURSES (1)	31%	8665	762	1629
56021356	DATA ENTRY KEYERS, COMPOSING	30%	179	7	25
22505213	ELECTRICAL & ELECTRONIC TECHNS.	30%	1035	43	147
85705568	DATA PROCESSING EQUIP. REPAIRERS	30%	182	4	22
32911202	MEDICAL RECORDS TECHN.& TECHNOL.	29%	295	28	58
32926195	ELECTROCARDIOGRAPH TECHNICIANS	29%	78	5	13
32923196	ELECTROENCEPHALOGRAPH TECHN.	27%	28	2	5
32114169	VETERINARIANS, VET. INSPECTORS	27%	87	16	25
68021421	USHERS, LOBBY ATT., TICKET TAKER	26%	146	8	23
32305162	OCCUPATIONAL THERAPISTS	26%	156	13	29
34035171	ARTISTS AND COMMERCIAL ARTISTS	26%	285	36	65
32308163	PHYSICAL THERAPISTS	26%	253	12	37
32928207	SURGICAL TECHNICIANS	26%	235	16	40
49023254	CASHIERS (1)	26%	9617	992	1954
27505101	DIRECTORS,RELIG. ACT./EDUC. (1)	25%	925	410	503
34008183	PUBLIC RELATIONS SPECIALISTS	25%	440	68	112
32302165	RESPIRATORY THERAPISTS	25%	222	4	26
24311081	MEDICAL SCIENTISTS	25%	40	1	5
95014824	PETROLEUM REFINERY OPERATORS	25%	2	0	0
87921551	ROUSTABOUTS	25%	1	0	0
91505689	COMBINATION MACH.TOOL SET/OP,M/P	25%	408	36	77
63017430	CORRECTION OFFICERS AND JAILERS	24%	589	53	112
21114025	ACCOUNTANTS AND AUDITORS	24%	3460	438	784
28108110	LAWYERS	24%	1126	308	421
32108155	OPTOMETRISTS	23%	98	35	45
89921675	DENTAL LABORATORY TECHNICIANS	23%	262	32	58
91508688	COMBINATION MACH.TOOL OPER., M/P	23%	216	21	43
91502686	NUMERICAL CONTROL MACH.TOOL, M/P	23%	456	61	107
79017473	ANIMAL CARETAKERS, EXCEPT FARM	22%	145	14	29

(1) Denotes occurrence in both Tables 5 and 6.

(Source: WIS DILHR, Bureau of Labor Market Information, 1987)

The lowest rates of growth are expected in clerical and administrative support and production, operation and maintenance occupations. Their rates were one-half of the highest groups' at 8.0%. The other major sectors, managerial, sales and agriculture-related occupations, are expected to have growth rates much closer to the top than the bottom; at 14.0%, 15.0% and 13.0% respectively.

Table 5 includes all occupations with total annual openings over 500. It shows the occupations that are expected to have the most jobs available each year from 1985 to 1995. They are listed in descending order by total annual openings. While this group of occupations is only 5.0% of the 723 total occupations, it is expected to provide 46% of the yearly job openings. This group will average 1,199 jobs per year for total employment opportunities of 41,971. The ratio of separations to growth averages three-to-one for this group of occupations, which is almost identical to the ratio for all occupations.

The first 10 occupations on Table 5 dominate the list with over 55% of the total job openings. Four of the occupations; salespersons, cashiers, bartenders and waiters/waitresses are expected to have 9,184 yearly jobs. These are primarily trade industry jobs and trade is expected to grow 1.2% yearly from 1985 to 1995. Three service industry occupations are included in the first ten jobs with the most openings. They are janitors, nurses, nursing aides and orderlies, with total expected openings of 7,163 each year. Services was projected to grow 1.8% yearly to 1995. The other three of the top ten occupations include a managerial and two clerical occupations, which draw from all industry sectors but will get strong stimulation from the finance, insurance and real estate industry.

The 35 occupations with the greatest projected rates of growth are listed in Table 6 are expected to grow by 33,070 jobs in the 1985 through 1995 period. This accounts for about 14.0% of all occupational growth expected, but these jobs comprise only 4.0% of the total list. While these occupations show large percentage growth, most of the numbers are not impressive, because most of them are growing from a small base.

Looking at the yearly growth, these 35 occupations will average about 103 jobs per year or a total yearly growth of 3,307 for the group. This represents about 14.0% of total yearly growth for all jobs. The average yearly growth rate for all occupations is forecast to be 32 jobs annually from 1985 to 1995. This group is projected to have an average yearly growth over three times the amount of the total average.

The annual openings resulting from separations for this group averaged 112 per occupation compared to 93 per occupation for all occupations. The yearly total of openings due to separations for these high-percentage growth occupations will be 3,584, which is about 5.0% of the total of all openings due to separations. Total annual openings for these high percentage growth jobs averaged 215 per occupation, which is almost double the 126 for all occupations. The total yearly jobs for this group is 6,891, which is nearly 8.0% of the total yearly jobs for all occupations expected from 1985 through 1995.

Of 723 occupations, 54 are expected to employ fewer people in 1995 than in 1985 (see Table 7). It is doubtful if any layoffs will be necessary because openings resulting from separations (deaths, retirements and people leaving the work force) are expected to provide enough opportunities to absorb the displaced workers in all but four occupations. The total number of displaced workers from these four occupations would be 39 per year. Two of the occupations, stenographers and data entry keyers, have skills that are probably transferable to typist jobs where there are annual average total job openings of 288.

TABLE 7

OCCUPATIONS WITH THE GREATEST PROJECTED DECLINE IN NEW EMPLOYMENT IN WISCONSIN, 1985 THROUGH 1995

STANDARD OCCUPATION CODE	OCCUPATION TITLE	PROJECTED ANNUAL GROWTH	PROJECTED ANNUAL SEPARATIONS	TOTAL ANNUAL OPENINGS
97947867	INDUSTRIAL TRUCK & TRACTOR OPER.	-123	186	63
55302346	STENOGRAPHERS	-105	98	-7
56017355	DATA ENTRY KEYERS, EX. COMPOSING	-103	73	-29
92717748	SEWING MACH. OPERATOR, GARMENT	-35	182	147
55341306	PAYROLL AND TIMEKEEPING CLERKS	-28	123	95
55321336	FILE CLERKS	-25	109	84
85723570	ELECTRICAL POWERLINE INSTAL/RPR.	-22	32	10
58023327	STOCK CLERKS:STOCKROOM OR WAREH.	-20	384	364
91117697	MACHINE TOOL CUTTING OPER., M/P	-20	144	125
91321696	MACHINE FORMING OPERATORS, M/P	-19	108	90
92723750	SHOE SEWING MACHINE OPERATOR	-17	24	7
93935799	CANNERY WORKERS	-16	108	93
92705753	TEXTILE MACHINE OPERATORS	-12	12	0
91114694	GRINDING,BUFFING MACH.SET/OP.M/P	-12	82	70
91302700	PUNCHING MACH. SETTER/OPER., M/P	-10	60	50
31117137	GRADUATE ASSISTANTS, TEACHING	-9	97	88
92923772	FURNACE, KILN, OVEN,KETTLE OPER.	-8	7	-1
92721749	SEWING MACH. OPER., NON-GARMENT	-7	88	81
85726574	TELEPH. STATION INSTALL.& REPAIR	-7	5	-2
55328362	STATISTICAL CLERKS	-7	16	9
91305699	PRESS, BRAKE MACH.SETTER/OP.,M/P	-6	61	55
58026324	ORDER FILLERS, SALES	-6	95	89
91105695	LATHE,TURNING MACH.SETTER/OP,M/P	-5	78	73
91108691	DRILLING,BORING MACH.SET/OP.,M/P	-4	46	42
92947776	PAINTERS, TRANSPORTATION EQUIP.	-4	11	7
89511655	SHOE AND LEATHER WORKERS	-4	45	41
92941786	CUTTING AND SLICING SETTER/OPER.	-3	12	9
93928809	PORTABLE MACHINE CUTTERS	-3	4	1
85112580	MACHINERY MECHANICS:TEXTILE MACH	-3	3	0
89802629	SLAUGHTERERS AND BUTCHERS	-2	47	45
28302234	LAW CLERKS	-2	23	21
67008378	PEST CONTROLLERS AND ASSISTANTS	-2	11	9
56005298	DUPLICATING MACHINE OPERATORS	-2	4	2
93923811	SEWERS, HAND	-2	8	6
91314701	ROLLING MACHINE SETTER/OPER.,M/P	-2	5	3

(SOURCE: WIS DILHR, Bureau of Labor Market Information, 1987)

REFERENCES

U.S. Bureau of Labor Statistics. Employment Projections for 1995, March 1984, Bulletin 2197.

Estimating Occupational Separations From the Labor Force For States, Tomorrow's Manpower Needs, Supplement 4. Washington, D.C., 1974.

The National Industry-Occupational Matrix and Other Manpower Data, Tomorrow's Manpower Needs. Volume IV, revised. Bulletin 1637, Washington, D.C., 1969.

Occupational Projections and Training Data, 1984 Edition. Bulletin 2206. Washington, D.C., 1984.

"Projections of the Economy, Labor Force, Industrial and Occupational Change to 1995", Monthly Labor Review, Volume 108, Number 11, November, 1983.

"Projections of the U.S. Labor Force, GNP, Industrial Growth and Occupations to 1995", Monthly Labor Review, Volume 106, Number 11, November, 1983

U.S. Department of Commerce. 1985 U.S. Industrial Outlook Prospects For Over 350 Industries. Washington, D.C., 1985.

Wisconsin Department of Industry, Labor and Human Relations. Labor Market Information Bureau.

Wisconsin Industrial and Occupational Projections to 1995. Madison, 1987.

Wisconsin Labor Force 1954 through 1985, Average Annual Employment in Thousands, Madison 1986.

CHAPTER V

LABOR SUPPLY

Analysis of Job Service Applicants

1. Recent Changes in Job Service Applicant Demographic Characteristics: April, 1987 - July, 1987

The number of active job-seeking applicants did not change much overall between April and July of 1987, declining by 2,725, which was only 1.5% of the April total of 176,292. Any decline over this period is significant, however, as the normal seasonal change would be expected to increase the number of active job seekers. An improving economy and the decline in the size of the older school age population contributed towards this drop in the number of applicants. The slight decline does not mean there were no significant shifts in the characteristics of the applicants.

Highlighting April, 1987 - July, 1987 applicant characteristics changes:

- more were black; fewer were white;
- fewer were male; more were female;
- more were college graduates; fewer were high school graduates;
- veterans declined at a greater rate than non-veterans;
- fewer were dislocated workers; more were otherwise JTPA eligible;
- about the same number were handicapped; and
- fewer were WEOP or public assistance clients.

Table 1

Recent Demographic Characteristics and Changes in Job Service Applicants

Characteristic	4/87	7/87	Change Numeric	Change Percent
Race				
White	139,025	131,958	-7,067	-5.1%
Black	19,794	23,140	+3,346	+16.9%
Hispanic	3,537	3,946	+409	+11.6%
Other	13,936	14,523	+587	+4.2%
Sex				
Male	96,537	91,817	-4,720	-4.9%
Female	76,975	79,200	+2,225	+2.9%
Education				
Less than 8 Years	12,263	12,990	+727	+5.9%
Nine to Eleven Years	33,971	34,860	+889	+2.6%
Twelve Years	80,946	75,826	-5,120	-6.3%
Over Twelve Years	49,112	49,891	+779	+1.6%
Veteran Status				
Veteran	10,326	9,003	-1,323	-12.8%
Other	166,006	164,564	-1,442	-0.9%
Dislocated Worker	9,137	7,825	-1,312	-14.4%
JTPA-Eligible	18,099	20,547	+2,448	+13.5%
Handicapped	8,105	8,119	+14	+0.2%
WEOP/Public Assistance	34,068	32,995	-1,073	-3.1%
Total Applicants	176,292	173,567	-2,725	-1.5%

(SOURCE: Job Service, JSIS.)

2. Recent Changes in Job Service Applicant Occupational Attachment*

In the overall decline of active job-seeking applicants with the Job Service from April, 1987, to July, 1987, only one occupational grouping had more applicants in July. The professional group increased from 5,694 to 6,121, an increase of 7.5%. The unclassified residual category increased from 30,993 to 37,872 or 23.4%. This was most likely a reflection of more informal handling of the surge in applicants for summer jobs that takes place this time of the year.

The largest decrease occurred in the production working category, where there was a decline of 2,276 job seekers. The greatest percentage decline occurred in the construction worker category, which fell by 16.6%. Seasonal as well as business cycle factors are thought to have produced the latter decline.

Overall, the small decline in the number of jobseekers at the time of year when seasonal increases in the number of jobseekers are expected reflects an improving economy and the declining number of young new entrants into the labor market.

Table 2
Recent Changes in Job Service Applicants By Major Occupational Group Statewide

SOC Division	Occupational Title	Active Applicants April '87	Active Applicants July '87	Change Numeric	Change Percent
	Other......................	205	157	-48	-23.4%
99	Unclassified...............	30,993	37,872	+6,879	+22.2%
11-14	Exec./Admin./Managerial....	6,878	6,635	-243	-3.5%
16-34	Professional...............	5,694	6,121	+5,694	+7.5%
36-39	Technical..................	2,771	2,702	-69	-2.5%
40-44	Sales Occupations..........	11,304	10,793	-511	-4.5%
45-47	Admin. Supp. (inc. Clerical)	20,975	20,591	-384	-1.8%
50-52	Service Occupations........	22,298	21,387	-911	-4.1%
56-58	Farm., Forestry & Fishing..	2,249	2,061	-188	-9.1%
60-61	Mechanics & Repairers......	6,685	6,053	-632	-9.5%
63-65	Construction...............	5,416	4,517	-899	-16.6%
67-69	Precision Production.......	3,590	3,306	-284	-7.9%
71-78	Production Working.........	24,573	22,297	-2,276	-9.3%
81-83	Trans. & Material Handling.	8,204	7,146	-1,058	-12.9%
85-87	Hand., Equip. Clnrs. & Lbrs.	24,662	22,086	-2,576	-10.4%
State Summary		176,497	173,724	-2,773	-1.6%

(SOURCE: Job Service, JSIS.)

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*Occupational Attachment is the primary occupation a person is associated with when their work experience, education and training are considered. Jobseekers with little or no work experience or specific training may not be identifiable by any specific occupation attachment and would be placed in the miscellaneous and unclassified residual category.

TABLE 3

JOB SERVICE APPLICANTS AND OPENINGS BY MAJOR OCCUPATIONAL GROUP FOR THE MONTH OF APRIL, 1987

SOC DIVISION	OCCUPATIONAL TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
11 - 14	EXEC., ADMIN. & MANAGERS	6,878	222	31:1	124
16 - 34	PROFESSIONAL OCCUPATIONS	5,694	509	11.2:1	194
36 - 39	TECHNICAL OCCUPATIONS	2,771	251	11:1	92
40 - 44	SALES OCCUPATIONS	11,304	1,152	9.8:1	582
45 - 47	ADMIN. SUPPORT	20,298	1,780	11.8:1	777
50 - 52	SERVICE OCCUPATIONS	22,298	2,588	8.6:1	1,027
56 - 58	FARMING & FORESTRY AND FISHING	2,249	1,143	2:1	343
60 - 61	MECHANICS & REPAIRERS	6,685	492	13.6:1	202
63 - 65	CONSTRUCTION	5,416	372	14.6:1	219
67 - 69	PRECISION PRODUCTION	3,590	278	12.9:1	139
71 - 78	PRODUCTION WORK	24,573	1,563	15.7:1	533
81 - 83	TRANSPORTATION & MATERIAL HANDLING	8,204	453	18.1:1	246
75 - 87	HANDLERS, EQUIPMENT CLEANERS & LABORERS	24,662	1,044	23.6:1	706
99	OTHER	205	39	7.1:1	32
	UNCLASSIFIED	30,993	12,508	14.1:1	5,424

(SOURCE: Job Service, JSIS)

TABLE 4

JOB SERVICE APPLICANTS AND OPENINGS BY MAJOR OCCUPATIONAL GROUP FOR THE MONTH OF JULY, 1987

SOC DIVISION	OCCUPATIONAL TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
11 - 14	EXEC., ADMIN. & MANAGERS	6,635	265	25:1	163
16 - 34	PROFESSIONAL OCCUPATIONS	6,121	634	9.7:1	222
36 - 39	TECHNICAL OCCUPATIONS	2,702	248	10.9:1	133
40 - 44	SALES OCCUPATIONS	10,793	1,242	8.7:1	517
45 - 47	ADMIN. SUPPORT	20,591	1,788	11.5:1	930
50 - 52	SERVICE OCCUPATIONS	21,387	3,256	6.6:1	1,477
56 - 58	FARMING & FORESTRY AND FISHING	2,061	1,151	1.8:1	342
60 - 61	MECHANICS & REPAIRERS	6,053	487	12.4:1	279
63 - 65	CONSTRUCTION	4,517	447	10.1:1	273
67 - 69	PRECISION PRODUCTION	3,306	332	10:1	166
71 - 78	PRODUCTION WORK	22,297	2,010	11.1:1	1,212
81 - 83	TRANSPORTATION & MATERIAL HANDLING	7,146	538	13.3:1	299
75 - 87	HANDLERS, EQUIPMENT CLEANERS & LABORERS	22,086	1,317	16.8:1	1,053
99	OTHER	157	28	5.6:1	17
	UNCLASSIFIED	37,872	662	57.2:1	449
	TOTAL	173,724	14,405	12.1:1	7,532

(SOURCE: Job Service, JSIS)

3. Recent Changes In Job Service Active Job Openings on File: April, 1987-July, 1987

Normal seasonal changes and the improving economy resulted in an increase of 21.3% in the number of job openings received in Job Service offices during July when compared to April job openings.

Four industry groups had a greater number of openings in July over April, while four had a smaller number. Groupings with job opening increases were generally larger than the declines in other groupings. The trade grouping increased the most, 1,449 openings and had the highest rate of increase, 97.8%. The largest decline, occurred in the finance, insurance and real estate group, which had 838 fewer openings in July. The rate of decline at 60.6% was also the largest.

As one might expect, the number of construction job openings increased the most over the April to July period. An increase of 478 job openings in July was 302.5% greater than the 158 which existed in April. Only three of the thirteen occupational groups received fewer job openings in July than in April. The number of precision production worker job orders dropped by 26, or 70.4%. Job openings increased significantly for laborers and equipment cleaners as 892 or 117.2% more openings were received in July than in April, while openings for semiskilled production workers increased by 427 or 27.4%.

Table 5
Job Service Active Job Openings on File
By Industry
April, 1987 - July, 1987

			Change	
Industry	April, 1987	July, 1987	Numeric	Percentage
Agriculture (1)	50	798	+748	+1,496.0%
Construction	1,656	2,647	+991	+59.8%
Manufacturing	718	370	-348	-48.5%
TCPU (2)	830	519	-311	-37.5%
Trade	1,482	2,931	+1,449	+97.8%
FIRE (3)	2,221	1,383	-838	-60.6%
Service & Misc.	1,168	1,585	+417	+35.7%
Government	2,186	2,043	-143	-6.5%
Other	1,538	2,101	+563	+36.6%
Total	11,849	14,377	+2,528	+21.3%

(SOURCE: Job Service, JSIS.)

(1) Agriculture, Fishing & Forestry
(2) Transportation, Communication & Public Utilities
(3) Finance, Insurance & Real Estate

2. Current Job Service Available Applicants And Active Job Openings: July, 1987

Applicants and openings in Job Service files are classified using the Dictionary of Occupational Titles (DOT). With its many thousands of occupational measuring units, the DOT is appropriate for job matching but too cumbersome for statistical analysis purposes. A second system, the Standard Occupational Classification System (SOC), was developed to reduce the DOT to a number of units which allows some statistical analysis yet distinguishes that which needs to be distinguished. The SOC works reasonably well. The primary limitation is the inability to distinguish between machine operatives and tenders, a skill distinction in factory jobs that would be useful when using the data for educational planning purposes.

Classifying the Job Service applicant and openings files by the SOC system allows an analysis to be made with a more limited number of units than the DOT. The SOC is a grouping of one or more DOT occupations. Users can refer to the SOC manual issued by the U. S. Department of Commerce, Office of Federal Statistical Policy and Standards, if they wish to identify specific DOT titles grouped in a SOC occupational grouping.

Four primary data items are available from Job Service files:

-- the number of active applicants by occupational group;
-- the number of active job openings;
-- the ratio of active applicants to openings; and
-- the number of new openings taken in the reference month.

To this we have added a fifth item, the surplus or shortage of applicants over openings or openings over applicants. It is important to remember the categories used in the SOC are a grouping of a specific number of occupations, often very large numbers of different occupations distinguished by the Dictionary of Occupational Titles. It is also important to remember is the imperfect nature of the applicant and job openings classification process. Important, too, is the fact that a large amount of substitutions of jobseekers' skills occurs from one occupation into another. Some occupations limit substitution through a formal process of licensing or accreditation. Job applicants with special credentials can take jobs other than the one for which they are accredited, except for those occupations which limit entry by others. In addition, coding conventions in Job Service offices affect the distribution of applicants and orders into the various categories.

Thus, the separation of these openings and job orders into categories is only an approximation of the relative supply and demand for labor by occupation and may not represent the specific situation for a given occupation in a given community. Caution in the use of data is always appropriate but should not prevent the appropriate use of the data in decisionmaking. Information contained in this section will most likely not be definitive but will instead start the user in the direction needed to complete his or her information needs.

TABLE 6

JOB SERVICE ACTIVE OPENINGS FOR THE MONTH OF APRIL, 1987 FOR MAJOR SIC INDUSTRY DIVISIONS

SOC		INDUSTRY GROUP									
DIVISION	OCCUPATIONAL TITLE	AGRI	CONST	MFG	TRANS	TRADE	FINANCE	SERV	GOVT	OTHER	TOTAL
11 - 14	EXEC., ADMIN & MANAGERS	0	53	6	33	8	40	23	36	8	207
16 - 34	PROFESSIONAL OCCUPATIONS	0	99	13	5	6	368	9	1	58	559
36 - 39	TECHNICAL OCCUPATIONS	0	0	169	0	0	0	24	43	0	236
40 - 44	SALES OCCUPATIONS	0	0	88	0	104	115	802	0	2	1111
45 - 47	ADMIN. SUPPORT	0	156	56	36	78	869	20	563	1	1779
50 - 52	SERVICE OCCUPATIONS	0	8	240	0	0	829	80	1430	827	3414
56 - 58	FARMING & FORESTRY	27	0	0	0	187	0	6	96	74	390
60 - 61	MECHANICS & REPAIRERS	0	0	62	217	81	0	58	0	218	636
63 - 65	CONSTRUCTION	0	33	1	0	117	0	3	0	4	158
67 - 69	PRECISION PRODUCTION	0	231	11	14	0	0	18	0	97	371
71 - 78	PRODUCTION WORK	0	869	3	3	548	0	26	17	93	1559
81 - 83	TRANSPORTATION & MATERIAL HANDLING	0	207	65	29	11	0	48	0	154	514
75 - 87	HANDLERS, EQUIPMENT CLEANERS & LABORERS	0	0	4	493	342	0	51	0	2	892
99	OTHER	23	0	0	0	0	0	0	0	0	23

(SOURCE: Job Service, JSIS)

TABLE 7

JOB SERVICE ACTIVE OPENINGS FOR THE MONTH OF JULY, 1987
FOR MAJOR SIC INDUSTRY DIVISIONS

SOC DIVISION	OCCUPATIONAL TITLE	INDUSTRY GROUP AGRI	CONST	MFG	TRANS	TRADE	FINANCE	SERV	GOVT	OTHER	TOTAL
11 - 14	EXEC., ADMIN & MANAGERS	20	57	4	10	0	103	23	32	46	295
16 - 34	PROFESSIONAL OCCUPATIONS	115	0	27	4	6	411	24	1	125	713
36 - 39	TECHNICAL OCCUPATIONS	0	0	19	13	88	0	3	211	0	334
40 - 44	SALES OCCUPATIONS	0	0	79	0	96	42	814	0	1	1032
45 - 47	ADMIN. SUPPORT	404	0	50	10	223	655	3	442	225	2012
50 - 52	SERVICE OCCUPATIONS	0	8	3	32	1725	0	457	814	682	3713
56 - 58	FARMING & FORESTRY	1	0	0	0	362	0	15	91	0	478
60 - 61	MECHANICS & REPAIRERS	79	0	6	187	18	97	91	0	63	541
63 - 65	CONSTRUCTION	0	1	25	0	350	0	1	7	252	636
67 - 69	PRECISION PRODUCTION	0	0	13	27	18	0	22	0	30	110
71 - 78	PRODUCTION WORK	0	1760	21	0	24	75	100	0	6	1986
81 - 83	TRANSPORTATION & MATERIAL HANDLING	0	338	109	70	15	0	0	42	0	574
75 - 87	HANDLERS, EQUIPMENT CLEANERS & LABORERS	163	491	14	166	6	0	32	403	662	1937
99	OTHER	16	0	0	0	0	0	0	0	0	16

(SOURCE: Job Service, JSIS)

a. Occupational Attachment* of Active Applicants -- By Occupational Grouping With At Least 200 Active Job Applicants

The largest occupational group in the employment service file was that of assemblers, with 8,804 in the file. The group includes occupations concerned with assembling products. Skill requirements of jobs in this group are limited, and none would be craftspeople. The size of the applicant file for this occupational group indicates the fallout from the recession in goods-producing industries is still a problem for the labor market. Interestingly, this occupational group had the second largest number of openings and new openings, but had the highest number of surplus workers and a high 18.1 to 1 ratio of openings to applicants.

The second and almost equally as large occupational group of applicants was the freight, stock and material movers residual category, a largely unskilled category. This group had 8,213 active applicants and 431 active openings applicants. Thus, there was a surplus of 7,782 applicants for this type of work in Wisconsin at the end of July. The group also received the largest number of openings of any occupational group during the month of July, 433, and had a high 19.1 to 1 applicant to openings ratio.

The third largest group, general office occupations, had 5,304 applicants on file, a surplus of 5,031 jobseekers and a 19.4 to 1 ratio of openings to applicants. This group is a "catch all" group for persons who wish to do office work but who do not have adequate office skills for tasks such as typing or other keyboard work. A high 19.4 to 1 applicant/opening ratio existed.

The fourth largest group, janitors and cleaners, had 4,482 active applicants and 332 openings. This represented a surplus of 4,160 applicants and a 13.9 to 1 ratio of applicants to openings.

In July, there were 3,215 active applicants in the cashier category; 285 existing active openings, and 170 openings were received. The applicant to opening ratio was 11.3 to 1, and a surplus of 2,930 applicants existed.

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*Occupational Attachment is the primary occupation a person is associated with when their work experience, education and training are considered. Jobseekers with little or no work experience or specific training may not be identifiable by any specific occupation attachment and would be identified by the miscellaneous and unclassified residual category.

Table 8

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY LEVEL OF ACTIVE APPLICANTS

By Occupational Grouping With At Least 200 Active Job Applicants
End of July, 1987

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
7720	Assemblers	8,804	490	18.1:1	353
8726	Freight, Stock & Material Movers, NEC	8,213	431	19.1:1	433
4630	General Office Occupations	5,304	273	19.4:1	207
5244	Janitors & Cleaners	4,482	322	13.9:1	303
4364	Cashiers	3,215	285	11.3:1	170
5236	Nursing Aides, Orderlies & Attendants	2,826	231	12.2:1	70
8725	Machine Feeders & Offbearers	2,674	51	52.4:1	20
8761	Hand Packers & Packagers	2,632	164	16:1	100
4362	Sales Clerks	2,608	306	8.5:1	111
4624	Typists	2,276	399	5.7:1	116
4712	Bookkeeping & Accounting & Auditing Clerks	2,212	112	19.8:1	89
7529	Misc. Metal & Plastic Working Machine Oper. & Tenders	2,181	102	21.4:1	81
7714	Welders & Cutters	2,091	85	24.6:1	55
6479	Construction Trades, NEC	1,907	113	16.9:1	97
4622	Secretaries	1,831	118	15.5:1	86
8213	Truck Drivers, Heavy	1,716	76	22.6:1	45
4645	Receptionists	1,580	111	14.2:1	64
5219	Misc. Food & Beverage Preparation Occupations	1,541	224	6.9:1	106
8318	Industrial Truck & Tractor Equipment Operators	1,534	23	66.7:1	13
5213	Waiters & Waitresses	1,511	343	4.4:1	112
5214	Cooks, Except Short Order	1,457	306	4.8:1	140
5242	Maids & Housemen	1,340	192	7:1	83
6111	Automobile Mechanics	1,302	98	13.3:1	61
5216	Food Counter, Fountain & Related Occupations	1,258	352	3.6:1	88
6179	Mechanics & Repairers, NEC	1,229	76	16.2:1	52
8212	Truck Drivers, Tractor-Trailer	1,130	227	5:1	89
8710	Construction Laborers	1,016	87	11.7:1	71
4359	Salespersons, NEC	1,012	52	19.5:1	16
6422	Carpenters	978	128	7.6:1	73
4754	Stock & Inventory Clerks	949	255	3.7:1	59
5144	Guards & Police, Except Public Service	919	249	3.7:1	44
4249	Sales Representatives, NEC	907	43	21.1:1	11
7329	Misc. Metal & Plastic Working Machine Setup Operators	877	88	10:1	26
4793	Data Entry Keyers	852	76	11.2:1	44
4753	Traffic, Shipping & Receiving Clerks	834	24	34.8:1	19
1390	Officials & Administrators, Other, NEC	826	31	26.6:1	8
8214	Truck Drivers, Light (Inc. Delivery & Route Salespeople)	810	68	11.9:1	55
6813	Machinists	809	67	12.1:1	32
2032	Social Workers	801	81	9.9:1	24
6178	Millwrights	771	74	10.4:1	34
1490	Management Related Occupations, NEC	747	20	37.4:1	12
1412	Accountants & Auditors	734	33	22.2:1	25
5212	Bartenders	714	169	4.2:1	53
5264	Child Care Workers, Except Private Households	712	37	19.2:1	31

(CONTINUED)

Table 8
CURRENT JOB APPLICANTS AND OPENINGS RANKED BY LEVEL OF ACTIVE APPLICANTS

(continued)

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
1351	Managers, Food-Serving & Lodging Establishments	706	27	26.1:1	12
8218	Driver-Salesworkers	692	69	10:1	53
7100	Supervisors: Production Occupations	636	64	9.9:1	27
5215	Short-Order Cooks	629	209	3:1	38
5060	Child Care Workers, Private Households	575	60	9.6:1	95
3720	Drafting Occupations	570	72	7.9:1	34
6153	Electrical & Electronic Repairers, Comm. or Residential	553	24	23:1	13
4612	Computer Operators	548	16	34.3:1	13
7820	Production Inspectors, Checkers & Examiners	546	27	20.2:1	9
1370	Managers, Administrative Services	541	12	45.1:1	13
5622	Groundskeepers & Gardeners, Except Farms	540	204	2.6:1	132
2330	Secondary School Teachers	509	50	10.2:1	20
1250	Managers: Marketing, Advertising & Public Relations	508	12	42.3:1	8
7655	Textile Sewing Machine Operators & Tenders	506	93	5.4:1	23
1320	Production Managers, Industrial	475	13	36.5:1	10
2320	Elementary School Teachers	461	42	11:1	13
5253	Hairdressers & Cosmetologists	451	21	21.5:1	6
8280	Operating Engineers	427	9	47.4:1	9
2390	Adult Education & Other Teachers, NEC	426	37	11.5:1	14
6115	Automotive Body & Related Repairers	409	53	7.7:1	16
7679	Misc. Machine Operators & Tenders, NEC	395	19	20.8:1	18
6130	Industry Machinery Repairers	390	27	14.4:1	19
6442	Painters, Construction & Maintenance	389	44	8.8:1	41
8632	Helpers: Vehicle & Mobile Equipment Mechanics	389	15	25.9:1	10
7759	Misc. Hand Working Occupations	384	573	1:1.5	271
6432	Electricians	378	18	21:1	4
3711	Electrical & Electronic Engineering Technologists	362	17	21.3:1	6
7314	Punching & Shearing Machine Setup Operators	350	6	58.3:1	7
5217	Kitchen Workers, Food Preparation	331	32	10.3:1	11
8215	Bus Drivers	329	31	10.6:1	21
5211	Supervisors: Food & Beverage Preparation & Service	317	44	7.2:1	21
8618	Helpers: Machine Operators & Tenders, Assorted Machines	314	42	7.5:1	9
6881	Precision Inspectors, Testers & Graders	313	22	14.2:1	13
5241	Supervisors: Cleaning & Building Service Workers	309	24	12.9:1	10
6832	Cabinet Makers & Bench Carpenters	303	28	10.8:1	21
5617	Livestock Workers	299	109	2.7:1	42
5233	Health Aides, Except Nursing	295	23	12.8:1	10
4696	File Clerks	293	8	36.6:1	9
7740	Fabricators, NEC	289	2	144.5:1	9
3220	Designers	287	19	15.1:1	9
3990	Technicians, NEC	286	6	47.7:1	9
3971	Programmers, Business	285	22	13:1	15
6112	Bus & Truck Engine, & Diesel Engine Mechanics	281	31	9.1:1	15
4791	Bank Tellers	276	50	5.5:1	24
1634	Industrial Engineers	270	27	10:1	8
5612	General Farm Workers	258	49	5.3:1	36
3660	Licensed Practical Nurses	254	46	5.5:1	15

(CONTINUED)

Table 8

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY LEVEL OF ACTIVE APPLICANTS

(continued)

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
2400	Vocational & Educational Counselors	254	23	11:1	7
4699	Record Clerks, NEC	245	13	18.8:1	15
7662	Packaging & Filling Machine Operators & Tenders	240	24	10:1	19
5218	Waiters'/Waitresses' Assistants	233	35	6.7:1	9
3320	Public Relations Specialists & Publicity Workers	230	3	76.7:1	3
5070	Private Household Cleaners & Servants	228	37	6.2:1	28
6812	Precision Assemblers (Metal)	227	25	9.1:1	9
4795	Teachers' Aides	225	2	112.5:1	3
7443	Printing Press Setup Operators	222	13	17.1:1	7
8611	Helpers; Metal & Plastic Working Machine Operators	213	3	71:1	8
1635	Mechanical Engineers	211	32	6.6:1	16
6450	Plumbers, Pipefitters & Steamfitters	205	39	5.3:1	14
7753	Hand Cutting & Trimming Occupations	203	18	11.3:1	4
6468	Roofers	201	23	8.7:1	12
1449	Purchasing Agents and Buyers, NEC	200	7	28.6:1	7

Source: Job Service, JSIS

b. Active Openings By Occupational Grouping With At Least 200 Active Job Applicants.

Significant numbers of openings existed for occupational groups with 200 or more applicants on file, although there was generally a very high ratio of applicants to openings.

Interestingly, the occupational group with the largest number of openings, miscellaneous hand-working occupations, was the only occupational group of 200 or more applicants with more openings than active applicants. Skill requirements for this category are not the highest and are usually learned on the job, yet the occupation had more job openings than applicants at the end of July, 1987. Possibly coding conventions used in Job Service offices created this situation. A further look at why an "applicant shortage" existed appears to be of value. There were 271 new job openings received in July 1987. Over half of the active openings were active for over one month.

Other job categories with large numbers of active job openings had no pattern of high or low applicant to openings ratios. Classifications with the 10 largest number of active openings had an equal number of occupational groups with double-digit ratios and low ratios. Of the 28 occupational groupings with 100 openings or more, 10 had applicant/openings ratios of 5 to 1 or less.

At the lower end of the ranking, occupational categories with very small numbers of openings, despite also having small numbers of active applicants, had very large applicant to openings ratios. Two occupational groups, fabricators, NEC, and teachers' aides, had applicant to openings ratios of over 100 to 1.

Most of the specific occupations in the fabricators occupational group did not require high or even moderate skills. The large numbers of teachers' aides in the file relative to openings may be because of the school closing during the summer months.

Table 9

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY NUMBER OF ACTIVE OPENINGS

By Occupational Grouping With At Least 200 Active Job Applicants
End of July, 1987

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
7759	Misc. Hand-Working Occupations	384	573	1:1.5	271
7720	Assemblers	8,804	490	18.1:1	353
8726	Freight, Stock & Material Movers,	8,213	431	19.1:1	433
4624	Typists	2,276	399	5.7:1	116
5216	Food Counter, Fountain & Related Occupations	1,258	352	3.6:1	88
5213	Waiters & Waitresses	1,511	343	4.4:1	112
5244	Janitors & Cleaners	4,482	322	13.9:1	303
4362	Sales Clerks	2,608	306	8.5:1	111
5214	Cooks, Except Short Order	1,457	306	4.8:1	140
4364	Cashiers	3,215	285	11.3:1	170
4630	General Office Occupations	5,304	273	19.4:1	207
4754	Stock & Inventory Clerks	949	255	3.7:1	59
5144	Guards & Police, Except Public Service	919	249	3.7:1	44
5236	Nursing Aides, Orderlies & Attendants	2,826	231	12.2:1	70
8212	Truck Drivers, Tractor-Trailer	1,130	227	5:1	89
5219	Misc. Food & Beverage Preparation Occupations	1,541	224	6.9:1	106
5215	Short-Order Cooks	629	209	3:1	38
5622	Groundskeepers & Gardeners, Except Farms	540	204	2.6:1	132
5242	Maids & Housemen	1,340	192	7:1	83
5212	Bartenders	714	169	4.2:1	53
8761	Hand Packers & Packagers	2,632	164	16:1	100
6422	Carpenters	978	128	7.6:1	73
4622	Secretaries	1,831	118	15.5:1	86
6479	Construction Trades,	1,907	113	16.9:1	97
4712	Bookkeeping & Accounting & Auditing Clerks	2,212	112	19.8:1	89
4645	Receptionists	1,580	111	14.2:1	64
5617	Livestock Workers	299	109	2.7:1	42
7529	Misc. Metal & Plastic Working Machine Oper. & Tenders	2,181	102	21.4:1	81
6111	Automobile Mechanics	1,302	98	13.3:1	61
7655	Textile Sewing Machine Operators & Tenders	506	93	5.4:1	23
7329	Misc. Metal & Plastic Working Machine Setup Operators	877	88	10:1	26
8710	Construction Laborers	1,016	87	11.7:1	71
7714	Welders & Cutters	2,091	85	24.6:1	55
2032	Social Workers	801	81	9.9:1	24
8213	Truck Drivers, Heavy	1,716	76	22.6:1	45
6179	Mechanics & Repairers,	1,229	76	16.2:1	52
4793	Data Entry Keyers	852	76	11.2:1	44
6178	Millwrights	771	74	10.4:1	34
3720	Drafting Occupations	570	72	7.9:1	34
8218	Driver-Salesworkers	692	69	10:1	53
8214	Truck Drivers, Light (Inc. Delivery & Route Salespeople)	810	68	11.9:1	55
6813	Machinists	809	67	12.1:1	32
7100	Supervisors: Production Occupations	636	64	9.9:1	27
5060	Child Care Workers, Private Households	575	60	9.6:1	95

(CONTINUED)

Table 9
CURRENT JOB APPLICANTS AND OPENINGS RANKED BY NUMBER OF ACTIVE OPENINGS

(Continued)

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
6115	Automotive Body & Related Repairers	409	53	7.7:1	16
4359	Salespersons,	1,012	52	19.5:1	16
8725	Machine Feeders and Offbearers	2,674	51	52.4:1	20
2330	Secondary School Teachers	509	50	10.2:1	20
4791	Bank Tellers	276	50	5.5:1	24
5612	General Farm Workers	258	49	5.3:1	36
3660	Licensed Practical Nurses	254	46	5.5:1	15
6442	Painters, Construction & Maintenance	389	44	8.8:1	41
5211	Supervisors: Food & Beverage Preparation & Service	317	44	7.2:1	21
4249	Sales Representatives,	907	43	21.1:1	11
2320	Elementary School Teachers	461	42	11:1	13
8618	Helpers: Machine Operators & Tenders, Assorted Machines	314	42	7.5:1	9
6450	Plumbers, Pipefitters & Steamfitters	205	39	5.3:1	14
5264	Child Care Workers, Except Private Households	712	37	19.2:1	31
2390	Adult Education & Other Teachers,	426	37	11.5:1	14
5070	Private Household Cleaners & Servants	228	37	6.2:1	28
5218	Waiters'/Waitresses' Assistants	233	35	6.7:1	9
1412	Accountants & Auditors	734	33	22.2:1	25
5217	Kitchen Workers, Food Preparation	331	32	10.3:1	11
1635	Mechanical Engineers	211	32	6.6:1	16
1390	Officials & Administrators, Other,	826	31	26.6:1	8
8215	Bus Drivers	329	31	10.6:1	21
6112	Bus & Truck Engine, & Diesel Engine Mechanics	281	31	9.1:1	15
6832	Cabinet Makers & Bench Carpenters	303	28	10.8:1	21
1351	Managers, Food Serving & Lodging Establishments	706	27	26.1:1	12
7820	Production Inspectors, Checkers & Examiners	546	27	20.2:1	9
6130	Industry Machinery Repairers	390	27	14.4:1	19
1634	Industrial Engineers	270	27	10:1	8
6812	Precision Assemblers (Metal)	227	25	9.1:1	9
4753	Traffic, Shipping & Receiving Clerks	834	24	34.8:1	19
6153	Electrical & Electronic Repairers, Comm. or Residential	553	24	23:1	13
5241	Supervisors: Cleaning & Building Service Workers	309	24	12.9:1	10
7662	Packaging & Filling Machine Operators & Tenders	240	24	10:1	19
8318	Industrial Truck & Tractor Equipment Operators	1,534	23	66.7:1	13
5233	Health Aides, Except Nursing	295	23	12.8:1	10
2400	Vocational & Educational Counselors	254	23	11:1	7
6468	Roofers	201	23	8.7:1	12
6881	Precision Inspectors, Testers & Graders	313	22	14.2:1	13
3971	Programmers, Business	285	22	13:1	15
5253	Hairdressers & Cosmetologists	451	21	21.5:1	6
1490	Management Related Occupations,	747	20	37.4:1	12
7679	Misc. Machine Operators & Tenders,	395	19	20.8:1	18
3220	Designers	287	19	15.1:1	9
6432	Electricians	378	18	21:1	4
7753	Hand Cutting & Trimming Occupations	203	18	11.3:1	4
3711	Electrical & Electronic Engineering Technologists	362	17	21.3:1	6
4612	Computer Operators	548	16	34.3:1	13

(CONTINUED)

Table 9
CURRENT JOB APPLICANTS AND OPENINGS RANKED BY NUMBER OF ACTIVE OPENINGS

(Continued)

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
8632	Helpers: Vehicle & Mobile Equipment Mechanics	389	15	25.9:1	10
1320	Production Managers, Industrial	475	13	36.5:1	10
4699	Record Clerks,	245	13	18.8:1	15
7443	Printing Press Setup Operators	222	13	17.1:1	7
1370	Managers, Administrative Services	541	12	45.1:1	13
1250	Managers: Marketing, Advertising & Public Relations	508	12	42.3:1	8
8280	Operating Engineers	427	9	47.4:1	9
4696	File Clerks	293	8	36.6:1	9
1449	Purchasing Agents & Buyers,	200	7	28.6:1	7
7314	Punching & Shearing Machine Setup Operators	350	6	58.3:1	7
3990	Technicians,	286	6	47.7:1	9
3320	Public Relations Specialists & Publicity Workers	230	3	76.7:1	3
8611	Helpers; Metal & Plastic Working Machine Operators	213	3	71:1	8
7740	Fabricators,	289	2	144.5:1	9
4795	Teachers' Aides	225	2	112.5:1	3

c. Ratio of Job Service Available Applicants to Active Job Openings By Occupational Grouping With At Least 200 Active Job Applicants.

At the end of July, 1987, Job Service files contained 173,724 active applicants and 14,405 active openings, a ratio of 12.1 openings per applicant. While down from ratios of 17 to 1 or even 23 to 1 that were experienced earlier in the recovery from the recession(s) of the early 1980s, the current ratio illustrates we still have a general overabundance of job applicants to openings.

A large number of applicant records and a small number of orders had invalid codes. Many of these persons may be seeking summer work and were not assigned full DOT codes. If we subtract the invalid codes and orders from the fill totals, the active applicant/order ratio drops to 9.9 to 1, which remains lopsided and indicates few, if any, skilled labor shortages exist in Wisconsin at this time.

Because of the large number of occupational groupings (606), we have included in this brief analysis of applicant/opening ratios only those occupational groupings with at least 200 active applicants at the statewide level. The entire list of 606 categories is included in this section of the report.

One might expect that occupational groups with the highest ratios would be occupations requiring high levels of skill. Generally, that did not prove to be the case, however. Occupations with low ratios were mostly made up of what could be called unskilled or semi-skilled activities. Of the 9 occupations with the lowest ratios, none would be classified as skilled. Of 35 occupations with the lowest ratios (9.9 to 1 or less), perhaps eight, possibly 10, could be classified as professional or high-skilled occupations. The low ratio occupations generally were occupations where extensive hiring is being done because of industry growth and high turnover of personnel, not occupations with skill shortages.

Surprisingly, a higher percentage of occupation groups with very high applicant/openings ratios had high skill and/or formal training requirements. The 2 highest ratios, 144.5 to 1 and 112.5 to 1 for fabricators, NEC and teacher's Aides, did not require high skill and/or education levels, but a majority of the other occupational groups with high applicant/openings ratios did.

Of the 31 occupational groups with applicant/opening ratios of 20 to 1 or more, 16 had high skill or formal education requirements and 2 other occupational groups included some occupations with high skills requirements.

Virtually all of these occupational groups with high applicant/opening ratios and high skill or education received very small numbers of new openings during July. The accountants and auditors grouping did receive 25 openings during July.

Thus, our brief analysis revealed no readily apparent skill shortages and a continued availability of many highly skilled and educated applicants in Job Service files.

Table 10

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY RATIO

By Occupational Grouping With At Least 200 Active Job Applicants
End of July, 1987

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
7740	Fabricators,	289	2	144.5:1	9
4795	Teachers' Aides	225	2	112.5:1	3
3320	Public Relations Specialists & Publicity Workers	230	3	76.7:1	3
8611	Helpers; Metal & Plastic Working Machine Operators	213	3	71:1	8
8318	Industrial Truck & Tractor Equipment Operators	1,534	23	66.7:1	13
7314	Punching & Shearing Machine Setup Operators	350	6	58.3:1	7
8725	Machine Feeders & Offbearers	2,674	51	52.4:1	20
3990	Technicians,	286	6	47.7:1	9
8280	Operating Engineers	427	9	47.4:1	9
1370	Managers, Administrative Services	541	12	45.1:1	13
1250	Managers: Marketing, Advertising & Public Relations	508	12	42.3:1	8
1490	Management Related Occupations, NEC	747	20	37.4:1	12
4696	File Clerks	293	8	36.6:1	9
1320	Production Managers, Industrial	475	13	36.5:1	10
4753	Traffic, Shipping & Receiving Clerks	834	24	34.8:1	19
4612	Computer Operators	548	16	34.3:1	13
1449	Purchasing Agents & Buyers, NEC	200	7	28.6:1	7
1390	Officials & Administrators, Other, NEC	826	31	26.6:1	8
1351	Managers, Food Serving & Lodging Establishments	706	27	26.1:1	12
8632	Helpers: Vehicle & Mobile Equipment Mechanics	389	15	25.9:1	10
7714	Welders & Cutters	2,091	85	24.6:1	55
6153	Electrical & Electronic Repairers, Comm. or Residential	553	24	23:1	13
8213	Truck Drivers, Heavy	1,716	76	22.6:1	45
1412	Accountants & Auditors	734	33	22.2:1	25
5253	Hairdressers & Cosmetologists	451	21	21.5:1	6
7529	Misc. Metal & Plastic Working Machine Oper. & Tenders	2,181	102	21.4:1	81
3711	Electrical & Electronic Engineering Technologists	362	17	21.3:1	6
4249	Sales Representatives, NEC	907	43	21.1:1	11
6432	Electricians	378	18	21:1	4
7679	Misc. Machine Operators & Tenders, NEC	395	19	20.8:1	18
7820	Production Inspectors, Checkers & Examiners	546	27	20.2:1	9
4712	Bookkeeping & Accounting & Auditing Clerks	2,212	112	19.8:1	89
4359	Salespersons, NEC	1,012	52	19.5:1	16
4630	General Office Occupations	5,304	273	19.4:1	207
5264	Child Care Workers, Except Private Households	712	37	19.2:1	31
8726	Freight, Stock & Material Movers, NEC	8,213	431	19.1:1	433
4699	Record Clerks, NEC	245	13	18.8:1	15
7720	Assemblers	8,804	490	18.1:1	353
7443	Printing Press Setup Operators	222	13	17.1:1	7
6479	Construction Trades, NEC	1,907	113	16.9:1	97
6179	Mechanics & Repairers, NEC	1,229	76	16.2:1	52
8761	Hand Packers & Packagers	2,632	164	16:1	100
4622	Secretaries	1,831	118	15.5:1	86
3220	Designers	287	19	15.1:1	9

(CONTINUED)

Table 10

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY RATIO

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
6130	Industry Machinery Repairers	390	27	14.4:1	19
4645	Receptionists	1,580	111	14.2:1	64
6881	Precision Inspectors, Testers & Graders	313	22	14.2:1	13
5244	Janitors & Cleaners	4,482	322	13.9:1	303
6111	Automobile Mechanics	1,302	98	13.3:1	61
3971	Programmers, Business	285	22	13:1	15
5241	Supervisors: Cleaning & Building Service Workers	309	24	12.9:1	10
5233	Health Aides, Except Nursing	295	23	12.8:1	10
5236	Nursing Aides, Orderlies & Attendants	2,826	231	12.2:1	70
6813	Machinists	809	67	12.1:1	32
8214	Truck Drivers, Light (Inc. Delivery & Route Salespeople)	810	68	11.9:1	55
8710	Construction Laborers	1,016	87	11.7:1	71
2390	Adult Education & Other Teachers, NEC	426	37	11.5:1	14
4364	Cashiers	3,215	285	11.3:1	170
7753	Hand Cutting & Trimming Occupations	203	18	11.3:1	4
4793	Data Entry Keyers	852	76	11.2:1	44
2320	Elementary School Teachers	461	42	11:1	13
2400	Vocational & Educational Counselors	254	23	11:1	7
6832	Cabinet Makers & Bench Carpenters	303	28	10.8:1	21
8215	Bus Drivers	329	31	10.6:1	21
6178	Millwrights	771	74	10.4:1	34
5217	Kitchen Workers, Food Preparation	331	32	10.3:1	11
2330	Secondary School Teachers	509	50	10.2:1	20
1634	Industrial Engineers	270	27	10:1	8
7329	Misc. Metal & Plastic Working Machine Setup Operators	877	88	10:1	26
8218	Driver-Salesworkers	692	69	10:1	53
7662	Packaging & Filling Machine Operators & Tenders	240	24	10:1	19
2032	Social Workers	801	81	9.9:1	24
7100	Supervisors: Production Occupations	636	64	9.9:1	27
5060	Child Care Workers, Private Households	575	60	9.6:1	95
6112	Bus & Truck Engine, & Diesel Engine Mechanics	281	31	9.1:1	15
6812	Precision Assemblers (Metal)	227	25	9.1:1	9
6442	Painters, Construction & Maintenance	389	44	8.8:1	41
6468	Roofers	201	23	8.7:1	12
4362	Sales Clerks	2,608	306	8.5:1	111
3720	Drafting Occupations	570	72	7.9:1	34
6115	Automotive Body & Related Repairers	409	53	7.7:1	16
6422	Carpenters	978	128	7.6:1	73
8618	Helpers: Machine Operators & Tenders, Assorted Machines	314	42	7.5:1	9
5211	Supervisors: Food & Beverage Preparation & Service	317	44	7.2:1	21
5242	Maids & Housemen	1,340	192	7:1	83
5219	Misc. Food & Beverage Preparation Occupations	1,541	224	6.9:1	106
5218	Waiters'/Waitresses' Assistants	233	35	6.7:1	9
1635	Mechanical Engineers	211	32	6.6:1	16
5070	Private Household Cleaners & Servants	228	37	6.2:1	28
4624	Typists	2,276	399	5.7:1	116
4791	Bank Tellers	276	50	5.5:1	24

(CONTINUED)

Table 10

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY RATIO

(continued)

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
3660	Licensed Practical Nurses	254	46	5.5:1	15
7655	Textile Sewing Machine Operators & Tenders	506	93	5.4:1	23
5612	General Farm Workers	258	49	5.3:1	36
6450	Plumbers, Pipefitters & Steamfitters	205	39	5.3:1	14
8212	Truck Drivers, Tractor-Trailer	1,130	227	5:1	89
5214	Cooks, Except Short Order	1,457	306	4.8:1	140
5213	Waiters & Waitresses	1,511	343	4.4:1	112
5212	Bartenders	714	169	4.2:1	53
4754	Stock & Inventory Clerks	949	255	3.7:1	59
5144	Guards and Police, Except Public Service	919	249	3.7:1	44
5216	Food Counter, Fountain & Related Occupations	1,258	352	3.6:1	88
5215	Short-Order Cooks	629	209	3:1	38
5617	Livestock Workers	299	109	2.7:1	42
5622	Groundskeepers & Gardeners, Except Farms	540	204	2.6:1	132
7759	Misc. Hand-Working Occupations	384	573	1:1.5	271

(SOURCE: Job Service, JSIS)

d. Current Supplus Of Job Seeking Applicants By Occupational Grouping With At Least 200 Active Job Applicants

There is a large number of surplus applicants available for virtually all occupational groups. Of course, location, wages, working conditions and other factors interfere with the matching of applicants and openings and the subsequent filling of the available job openings.

Twenty-four occupational categories had 1,000 or more surplus applicants, while another 28 had from 500 to 999 surplus applicants. Only one occupational group with 200 or more active applicants, miscellaneous hand-working occupations, had more openings than applicants.

Our list of surplus applicants was selected from occupational groups with at least 200 active applicants. A few specialized occupational groups with less than 200 active applicants also have a surplus of openings over applicants. Only 8 other occupational categories with under 200 active applicants had more active job openings than active applicants. Farm machinery operators, with 102 applicants and 119 job openings, had a "shortage" of 17 workers and represented the only occupational group with a surplus of openings where special skills were needed in any number. Eight other occupational groups had a surplus of job openings. Three of these required special skills but they only had a shortage of one or two job seekers.

Table 11

Applicant Shortages by Occupation

	Active Applicants	Active Openings	Active Openings Shortage
Salesperson; Books, Stamps, Coins & Stat.	4	5	1
Fire Inspection & Prevention Occupations	2	3	1*
Orchard & Vineyard & Related Workers, Hand	26	71	45
Shaping & Joining Machine Operators & Tndrs.	2	9	7
Extruding & Forming Machine Setup Operators	1	2	1*
Protective Serv. Occup.,NEC (mostly lifegrds.)	12	115	103
Physical Therapists	6	8	2*
Parking Lot Attendants	20	32	12
Farm Machinery Operators	102	119	17*

(SOURCE: Job Service, JSIS.)

Overall, significant surpluses of job applicants exist for virtually all occupational groups. Thus, skilled worker shortages seem not to exist when one examines the Job Service files. Any difficulty in filling job openings would seem to result from barriers other than the general availability of applicants. Geographic mismatches, insufficient wages, undesirable working conditions, transportation problems, etc., rather than skill shortages would appear to be the primary barriers to filling job openings.

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*A significant amount of specialized training and/or experience is required to qualify for this occupation.

Table 12

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY EXCESS OF ACTIVE APPLICANTS

(Active Applicants minus Active Openings)
By Occupational Grouping With At Least 200 Active Job Applicants
End of July, 1987

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE SURPLUS APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
7720	Assemblers	8,314	490	18.1:1	353
8726	Freight, Stock & Material Movers, NEC	7,782	431	19.1:1	433
4630	General Office Occupations	5,031	273	19.4:1	207
5244	Janitors & Cleaners	4,160	322	13.9:1	303
4364	Cashiers	2,930	285	11.3:1	170
8725	Machine Feeders & Offbearers	2,623	51	52.4:1	20
5236	Nursing Aides, Orderlies & Attendants	2,595	231	12.2:1	70
8761	Hand Packers & Packagers	2,468	164	16:1	100
4362	Sales Clerks	2,302	306	8.5:1	111
4712	Bookkeeping & Accounting & Auditing Clerks	2,100	112	19.8:1	89
7529	Misc. Metal & Plastic Working Machine Oper. & Tenders	2,079	102	21.4:1	81
7714	Welders & Cutters	2,006	85	24.6:1	55
4624	Typists	1,877	399	5.7:1	116
6479	Construction Trades, NEC	1,794	113	16.9:1	97
4622	Secretaries	1,713	118	15.5:1	86
8213	Truck Drivers, Heavy	1,640	76	22.6:1	45
8318	Industrial Truck & Tractor Equipment Operators	1,511	23	66.7:1	13
4645	Receptionists	1,469	111	14.2:1	64
5219	Misc. Food & Beverage Preparation Occupations	1,317	224	6.9:1	106
6111	Automobile Mechanics	1,204	98	13.3:1	61
5213	Waiters and Waitresses	1,168	343	4.4:1	112
6179	Mechanics & Repairers, NEC	1,153	76	16.2:1	52
5214	Cooks, Except Short Order	1,151	306	4.8:1	140
5242	Maids & Housemen	1,148	192	7:1	83
4359	Salespersons, NEC	960	52	19.5:1	16
8710	Construction Laborers	929	87	11.7:1	71
5216	Food Counter, Fountain & Related Occupations	906	352	3.6:1	88
8212	Truck Drivers, Tractor-Trailer	903	227	5:1	89
4249	Sales Representatives, NEC	864	43	21.1:1	11
6422	Carpenters	850	128	7.6:1	73
4753	Traffic, Shipping & Receiving Clerks	810	24	34.8:1	19
1390	Officials & Administrators, Other, NEC	795	31	26.6:1	8
7329	Misc. Metal & Plastic Working Machine Setup Operators	789	88	10:1	26
4793	Data Entry Keyers	776	76	11.2:1	44
8214	Truck Drivers, Light (Inc. Delivery & Route Salespeople)	742	68	11.9:1	55
6813	Machinists	742	67	12.1:1	32
1490	Management Related Occupations, NEC	727	20	37.4:1	12
2032	Social Workers	720	81	9.9:1	24
1412	Accountants & Auditors	701	33	22.2:1	25
6178	Millwrights	697	74	10.4:1	34
4754	Stock & Inventory Clerks	694	255	3.7:1	59
1351	Managers, Food Serving & Lodging Establishments	679	27	26.1:1	12
5264	Child Care Workers, Except Private Households	675	37	19.2:1	31
5144	Guards & Police, Except Public Service	670	249	3.7:1	44

(CONTINUED)

Table 12

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY EXCESS OF ACTIVE APPLICANTS

[Active Applicants minus Active Openings]

(continued)

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE SURPLUS APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
8218	Driver-Salesworkers	623	69	10:1	53
7100	Supervisors: Production Occupations	572	64	9.9:1	27
5212	Bartenders	545	169	4.2:1	53
4612	Computer Operators	532	16	34.3:1	13
6153	Electrical & Electronic Repairers, Comm. or Residential	529	24	23:1	13
1370	Managers, Administrative Services	529	12	45.1:1	13
7820	Production Inspectors, Checkers & Examiners	519	27	20.2:1	9
5060	Child Care Workers, Private Households	515	60	9.6:1	95
3720	Drafting Occupations	498	72	7.9:1	34
1250	Managers: Marketing, Advertising & Public Relations	496	12	42.3:1	8
1320	Production Managers, Industrial	462	13	36.5:1	10
2330	Secondary School Teachers	459	50	10.2:1	20
5253	Hairdressers & Cosmetologists	430	21	21.5:1	6
5215	Short-Order Cooks	420	209	3:1	38
2320	Elementary School Teachers	419	42	11:1	13
8280	Operating Engineers	418	9	47.4:1	9
7655	Textile Sewing Machine Operators & Tenders	413	93	5.4:1	23
2390	Adult Education & Other Teachers, NEC	389	37	11.5:1	14
7679	Misc. Machine Operators & Tenders, NEC	376	19	20.8:1	18
8632	Helpers: Vehicle & Mobile Equipment Mechanics	374	15	25.9:1	10
6130	Industry Machinery Repairers	363	27	14.4:1	19
6432	Electricians	360	18	21:1	4
6115	Automotive Body & Related Repairers	356	53	7.7:1	16
6442	Painters, Construction & Maintenance	345	44	8.8:1	41
3711	Electrical & Electronic Engineering Technologists	345	17	21.3:1	6
7314	Punching & Shearing Machine Setup Operators	344	6	58.3:1	7
5622	Groundskeepers & Gardeners, Except Farms	336	204	2.6:1	132
5217	Kitchen Workers, Food Preparation	299	32	10.3:1	11
8215	Bus Drivers	298	31	10.6:1	21
6881	Precision Inspectors, Testers & Graders	291	22	14.2:1	13
7740	Fabricators, NEC	287	2	144.5:1	9
5241	Supervisors: Cleaning & Building Service Workers	285	24	12.9:1	10
4696	File Clerks	285	8	36.6:1	9
3990	Technicians, NEC	280	6	47.7:1	9
6832	Cabinet Makers & Bench Carpenters	275	28	10.8:1	21
5211	Supervisors: Food & Beverage Preparation & Service	273	44	7.2:1	21
8618	Helpers: Machine Operators & Tenders, Assorted Machines	272	42	7.5:1	9
5233	Health Aides, Except Nursing	272	23	12.8:1	10
3220	Designers	268	19	15.1:1	9
3971	Programmers, Business	263	22	13:1	15
6112	Bus & Truck Engine, & Diesel Engine Mechanics	250	31	9.1:1	15
1634	Industrial Engineers	243	27	10:1	8
4699	Record Clerks, NEC	232	13	18.8:1	15
2400	Vocational & Educational Counselors	231	23	11:1	7
3320	Public Relations Specialists & Publicity Workers	227	3	76.7:1	3
4791	Bank Tellers	226	50	5.5:1	24
4795	Teachers' Aides	223	2	112.5:1	3

(CONTINUED)

Table 12
CURRENT JOB APPLICANTS AND OPENINGS RANKED BY EXCESS OF ACTIVE APPLICANTS
(Active Applicants minus Active Openings)

(continued)

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE SURPLUS APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
7662	Packaging & Filling Machine Operators & Tenders	216	24	10:1	19
8611	Helpers; Metal & Plastic Working Machine Operators	210	3	71:1	8
5612	General Farm Workers	209	49	5.3:1	36
7443	Printing Press Setup Operators	209	13	17.1:1	7
3660	Licensed Practical Nurses	208	46	5.5:1	15
6812	Precision Assemblers (Metal)	202	25	9.1:1	9
5218	Waiters'/Waitresses' Assistants	198	35	6.7:1	9
1449	Purchasing Agents & Buyers, NEC	193	7	28.6:1	7
5070	Private Household Cleaners & Servants	191	37	6.2:1	28
5617	Livestock Workers	190	109	2.7:1	42
7753	Hand Cutting & Trimming Occupations	185	18	11.3:1	4
1635	Mechanical Engineers	179	32	6.6:1	16
6468	Roofers	178	23	8.7:1	12
6450	Plumbers, Pipefitters & Steamfitters	166	39	5.3:1	14
7759	Misc. Hand-Working Occupations	-189	573	1:1.5	271

(SOURCE: Job Services, JSIS)

e. New Job Openings Taken In July, 1987 By Occupational Grouping With At Least 200 Active Job Applicants.

Of the 106 occupational groupings with 200 or more active job applicants, 13 received 100 or more job openings in July. Six of these groupings had double-digit ratios of applicants to openings and 7 had lower applicant/opening ratios. None of these 13 occupational groups was comprised of occupations that require a high level of special skills.

Of the 23 occupational groups which received less than 10 openings in July, 20 had double-digit applicant/openings ratios.

Thirteen occupational groupings received at least as many or more openings during the month of July as were active openings on the last day of the month. One grouping, freight, stock and material movers, NEC, received the largest number of openings during July, 433. This occupational grouping consists of unskilled jobs handling materials generally outside of manufacturing facilities. The large number of new openings to total active openings indicates that many of the job openings are temporary or have a high turnover rate.

Of the 13 occupational groupings with more openings received during July than available at the end of July, only one other had a significant amount of openings: the child care worker, private household group. This is also a temporary type job or one with rapid turnover. Other occupations with these characteristics had much smaller numbers of new openings and active openings. All of the categories except the child care worker group have very high applicant to openings ratios. Again, the thing that stands out in this listing is the surplus of available applicants to the number of openings.

Table 13

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY NUMBER OF NEW OPENINGS TAKEN IN JULY OF 1987

By Occupational Grouping With At Least 200 Active Job Applicants

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
8726	Freight, Stock & Material Movers, NEC	8,213	431	19.1:1	433
7720	Assemblers	8,804	490	18.1:1	353
5244	Janitors & Cleaners	4,482	322	13.9:1	303
7759	Misc. Hand-Working Occupations	384	573	1:1.5	271
4630	General Office Occupations	5,304	273	19.4:1	207
4364	Cashiers	3,215	285	11.3:1	170
5214	Cooks, Except Short Order	1,457	306	4.8:1	140
5622	Groundskeepers & Gardeners, Except Farms	540	204	2.6:1	132
4624	Typists	2,276	399	5.7:1	116
5213	Waiters & Waitresses	1,511	343	4.4:1	112
4362	Sales Clerks	2,608	306	8.5:1	111
5219	Misc. Food & Beverage Preparation Occupations	1,541	224	6.9:1	106
8761	Hand Packers & Packagers	2,632	164	16:1	100
6479	Construction Trades, NEC	1,907	113	16.9:1	97
5060	Child Care Workers, Private Households	575	60	9.6:1	95
4712	Bookkeeping & Accounting & Auditing Clerks	2,212	112	19.8:1	89
8212	Truck Drivers, Tractor-Trailer	1,130	227	5:1	89
5216	Food Counter, Fountain & Related Occupations	1,258	352	3.6:1	88
4622	Secretaries	1,831	118	15.5:1	86
5242	Maids & Housemen	1,340	192	7:1	83
7529	Misc. Metal & Plastic Working Machine Oper. & Tenders	2,181	102	21.4:1	81
6422	Carpenters	978	128	7.6:1	73
8710	Construction Laborers	1,016	87	11.7:1	71
5236	Nursing Aides, Orderlies & Attendants	2,826	231	12.2:1	70
4645	Receptionists	1,580	111	14.2:1	64
6111	Automobile Mechanics	1,302	98	13.3:1	61
4754	Stock & Inventory Clerks	949	255	3.7:1	59
7714	Welders & Cutters	2,091	85	24.6:1	55
8214	Truck Drivers, Light (Inc. Delivery & Route Salespeople)	810	68	11.9:1	55
5212	Bartenders	714	169	4.2:1	53
8218	Driver-Salesworkers	692	69	10:1	53
6179	Mechanics & Repairers, NEC	1,229	76	16.2:1	52
8213	Truck Drivers, Heavy	1,716	76	22.6:1	45
5144	Guards & Police, Except Public Service	919	249	3.7:1	44
4793	Data Entry Keyers	852	76	11.2:1	44
5617	Livestock Workers	299	109	2.7:1	42
6442	Painters, Construction & Maintenance	389	44	8.8:1	41
5215	Short-Order Cooks	629	209	3:1	38
5612	General Farm Workers	258	49	5.3:1	36
6178	Millwrights	771	74	10.4:1	34
3720	Drafting Occupations	570	72	7.9:1	34
6813	Machinists	809	67	12.1:1	32
5264	Child Care Workers, Except Private Households	712	37	19.2:1	31
5070	Private Household Cleaners & Servants	228	37	6.2:1	28

(CONTINUED)

Table 13

CURRENT JOB APPLICANTS AND OPENINGS RANKED BY NUMBER OF NEW OPENINGS TAKEN THIS MONTH

(continued)

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
7100	Supervisors: Production Occupations	636	64	9.9:1	27
7329	Misc. Metal & Plastic Working Machine Setup Operators	877	88	10:1	26
1412	Accountants & Auditors	734	33	22.2:1	25
2032	Social Workers	801	81	9.9:1	24
4791	Bank Tellers	276	50	5.5:1	24
7655	Textile Sewing Machine Operators & Tenders	506	93	5.4:1	23
8215	Bus Drivers	329	31	10.6:1	21
5211	Supervisors: Food & Beverage Preparation & Service	317	44	7.2:1	21
6832	Cabinet Makers & Bench Carpenters	303	28	10.8:1	21
8725	Machine Feeders & Offbearers	2,674	51	52.4:1	20
2330	Secondary School Teachers	509	50	10.2:1	20
4753	Traffic, Shipping & Receiving Clerks	834	24	34.8:1	19
6130	Industry Machinery Repairers	390	27	14.4:1	19
7662	Packaging & Filling Machine Operators & Tenders	240	24	10:1	19
7679	Misc. Machine Operators & Tenders, NEC	395	19	20.8:1	18
4359	Salespersons, NEC	1,012	52	19.5:1	16
6115	Automotive Body & Related Repairers	409	53	7.7:1	16
1635	Mechanical Engineers	211	32	6.6:1	16
3971	Programmers, Business	285	22	13:1	15
6112	Bus & Truck Engine, & Diesel Engine Mechanics	281	31	9.1:1	15
3660	Licensed Practical Nurses	254	46	5.5:1	15
4699	Record Clerks, NEC	245	13	18.8:1	15
2390	Adult Education & Other Teachers, NEC	426	37	11.5:1	14
6450	Plumbers, Pipefitters & Steamfitters	205	39	5.3:1	14
8318	Industrial Truck & Tractor Equipment Operators	1,534	23	66.7:1	13
6153	Electrical & Electronic Repairers, Comm. or Residential	553	24	23:1	13
4612	Computer Operators	548	16	34.3:1	13
1370	Managers, Administrative Services	541	12	45.1:1	13
2320	Elementary School Teachers	461	42	11:1	13
6881	Precision Inspectors, Testers & Graders	313	22	14.2:1	13
1490	Management Related Occupations, NEC	747	20	37.4:1	12
1351	Managers, Food Serving & Lodging Establishments	706	27	26.1:1	12
6468	Roofers	201	23	8.7:1	12
4249	Sales Representatives, NEC	907	43	21.1:1	11
5217	Kitchen Workers, Food Preparation	331	32	10.3:1	11
1320	Production Managers, Industrial	475	13	36.5:1	10
8632	Helpers: Vehicle & Mobile Equipment Mechanics	389	15	25.9:1	10
5241	Supervisors: Cleaning & Building Service Workers	309	24	12.9:1	10
5233	Health Aides, Except Nursing	295	23	12.8:1	10
7820	Production Inspectors, Checkers & Examiners	546	27	20.2:1	9
8280	Operating Engineers	427	9	47.4:1	9
8618	Helpers: Machine Operators & Tenders, Assorted Machines	314	42	7.5:1	9
4696	File Clerks	293	8	36.6:1	9
7740	Fabricators, NEC	289	2	144.5:1	9
3220	Designers	287	19	15.1:1	9
3990	Technicians, NEC	286	6	47.7:1	9
5218	Waiters'/Waitresses' Assistants	233	35	6.7:1	9

(CONTINUED)

Table 13
CURRENT JOB APPLICANTS AND OPENINGS RANKED BY NUMBER OF NEW OPENINGS TAKEN THIS MONTH

(continued)

SOC CODE	STANDARD OCCUPATIONAL CLASSIFICATION TITLE	ACTIVE APPLICANTS	ACTIVE OPENINGS	RATIO	NEW OPENINGS TAKEN THIS MONTH
6812	Precision Assemblers (Metal)	227	25	9.1:1	9
1390	Officials & Administrators, Other, NEC	826	31	26.6:1	8
1250	Managers: Marketing, Advertising & Public Relations	508	12	42.3:1	8
1634	Industrial Engineers	270	27	10:1	8
8611	Helpers; Metal & Plastic Working Machine Operators	213	3	71:1	8
7314	Punching & Shearing Machine Setup Operators	350	6	58.3:1	7
2400	Vocational & Educational Counselors	254	23	11:1	7
7443	Printing Press Setup Operators	222	13	17.1:1	7
1449	Purchasing Agents & Buyers, NEC	200	7	28.6:1	7
5253	Hairdressers & Cosmetologists	451	21	21.5:1	6
3711	Electrical & Electronic Engineering Technologists	362	17	21.3:1	6
6432	Electricians	378	18	21:1	4
7753	Hand Cutting & Trimming Occupations	203	18	11.3:1	4
3320	Public Relations Specialists & Publicity Workers	230	3	76.7:1	3
4795	Teachers' Aides	225	2	112.5:1	3

Source: Job Service, JSIS

CHAPTER VI

A. NEW BUSINESS FORMATIONS

There is much talk about entrepreneurship or the formation of new businesses, as a way to increase employment. We can learn more about the impact of new business formations and their growth by studying records of employers covered under unemployment compensation. Tables 1 through 3 depict new firm births and deaths in Wisconsin during 1985-86.

The number of new private establishments was 8,362 in 1985 which equals 8.7% of all covered firms in March, 1985. Most of the new firms, (8,137 of 8,362) had one to 19 employees. New firms equaled 9.8% of all firms in this size group. Using this percentage of the March 1985 employment gives an estimate of about 35,450 employees in these new firms. There were 210 new firms with 20 to 99 employees. This equaled 2.0% of all firms in this size group. If the new firms are average for this size group, this would be 8,570 employees. Only 15 new firms had 100 or more employees. This was 0.6% of all firms with over 100 employees. If these were average for all firms with 100 or more employees, these new firms would have 4,600 employees.

These estimates are likely to exaggerate the employment impact of new firms, but new firms are clearly an important source of jobs. There were more jobs in smaller new firms than in larger ones in 1985. Training new entrepreneurs and encouraging and assisting small business formations could stimulate significant sources of new employment.

Depending upon one's definition of a new firm, these estimates may undercount new firms. Our methodology did not count as a new firm any business that branched off from an existing business because it is difficult to determine whether this is the start of something new or just moving or reorganizing the existing business. Therefore, we decided to report only what we knew were new establishments.

Some 15% of the new firms, 148 firms, went out of business within their first year. Surprisingly, three of the firms that started with 100 or more employees were among those that closed. The Services industries had 2,711 new firms, with 696 new firms in Business Services alone. There were 378 new employers in Private Household Services, 339 in Personal Services, 301 in Health Services, and 253 in Automotive Services.

There were 2,808 new firms in Wholesale and Retail Trade, with 777 of these in wholesale trade. There were 872 new eating and drinking places, which does not count those who bought and renamed an existing business.

Transportation, Communication and Public Utilities had the largest percentage of new firm formations. The 517 new firms were 10.7% of the number of March, 1985, establishments. There were 395 new motor freight carriers, but these new firms had a high mortality. Eighty-two, or 20.8%, of these motor freight carriers were not in business a year later. The Construction industry has a high business turnover. There were 1,043 new establishments in 1985, and 20.9% of these new firms were not in business a year later.

There were 7,2[illegible] new businesses in 1986, some 1,110 less than in 1985, but there were more larger new businesses in 1986 with 226 in the 20 to 99 employee size group, and 23 with 100 or more employees.

Comparison of the number of firms is difficult because there are always establishments that are in business, but have no employees. In March, 1985, there were 10,525 covered private establishments with no employees. In 1986 the number was 11,019. We assume that an establishment is no longer in business if it is no longer covered by unemployment compensation, or if it has had no employees in the previous five quarters. Several years of data are needed to analyze trends in business formations.

TABLE 1
Private Employers, Employment, New Firms, and New Firm Mortality in Wisconsin in 1985

SIC	Industry and Employing Size	1985 Employed	Total Firms	1985		Survived in 1985	Mortality Rate
				New	%		
TOTAL	All Firms	1,568,604	96,483	8,362	8.7%	7,104	15.0%
	0 - 19 Employes	371,974	83,444	8,137	9.8%	6,901	15.2%
	20 - 99 Employes	428,643	10,659	210	2.0%	191	9.0%
	100 + Employes	767,987	2,380	15	0.6%	12	20.0%
01 - 09	Agriculture	11,849	1,698	154	9.1%	139	9.7%
	0 - 19	7,218	1,598	150	9.4%	135	10.0%
	20 - 99	3,060	91	4	4.4%	4	0.0%
	100 +	1,571	9	0	0.0%	0	
10 - 14	Mining	1,367	183	3	1.6%	2	33.3%
	0 - 19	821	167	3	1.8%	2	33.3%
	20 - 99	546	16	0	0.0%	0	
	100 +	0	0	0		0	
15 - 17	Construction	51,577	10,664	1,043	9.8%	825	20.9%
	0 - 19	30,855	10,206	1,032	10.1%	818	20.7%
	20 - 99	15,123	420	11	2.6%	7	36.4%
	100 +	5,599	38	0	0.0%	0	
20 - 39	Manufacturing	501,841	8,638	557	6.4%	506	9.2%
	0 - 19	35,769	5,481	540	9.9%	490	9.3%
	20 - 99	96,744	2,167	16	0.7%	15	6.3%
	100 +	369,328	990	1	0.1%	1	0.0%
40 - 49	Trns, Com, & P.U	86,177	4,821	517	10.7%	422	18.4%
	0 - 19	18,395	4,007	511	12.8%	418	18.2%
	20 - 99	27,647	695	6	0.9%	4	33.3%
	100 +	40,135	119	0	0.0%	0	
50 - 51	Wholesale Trade	97,212	9,468	777	8.2%	664	14.5%
	0 - 19	38,749	8,286	774	9.3%	661	14.6%
	20 - 99	40,514	1,095	3	0.3%	3	0.0%
	100 +	17,949	87	0	0.0%	0	
52 - 59	Retail Trade	346,733	25,638	2,031	7.9%	1,729	14.9%
	0 - 19	112,672	21,845	1,897	8.7%	1,608	15.2%
	20 - 99	131,542	3,398	129	3.8%	118	8.5%
	100 +	102,519	395	5	1.3%	3	40.0%
60 - 69	Fin, Ins, & R.E.	99,239	7,651	569	7.4%	495	13.0%
	0 - 19	24,523	6,831	564	8.3%	490	13.1%
	20 - 99	27,914	692	5	0.7%	5	0.0%
	100 +	46,802	128	0	0.0%	0	
70 - 89	Services	372,592	27,718	2,711	9.8%	2,322	14.3%
	0 - 19	102,955	25,019	2,666	10.7%	2,279	14.5%
	20 - 99	85,553	2,085	36	1.7%	35	2.8%
	100 +	184,084	614	9	1.5%	8	11.1%

SOURCE: DILHR U.C. FILES

TABLE 2
Change In Private Employers, Employment, New Firms and New Firm Mortality in Wisconsin: 1985-86

SIC	Industry and Employing Size	Total Firms		New Firms		1986 % of 1985	Percent New	
		1985	1986	1985	1986		1985	1986
TOTAL	All Private Firm	96,483	97,914	8,362	7,252	86.7%	8.7%	7.4%
	0 - 19 Employes	83,444	84,600	8,137	7,003	86.1%	9.8%	8.3%
	20 - 99 Employes	10,659	10,841	210	226	107.6%	2.0%	2.1%
	100 + Employes	2,380	2,473	15	23	153.3%	0.6%	0.9%
01 - 09	Agriculture	1,698	1,783	154	123	79.9%	9.1%	6.9%
	0 - 19	1,598	1,680	150	121	80.7%	9.4%	7.2%
	20 - 99	91	95	4	2	50.0%	4.4%	2.1%
	100 +	9	8	0	0		0.0%	0.0%
10 - 14	Mining	183	173	3	3	100.0%	1.6%	1.7%
	0 - 19	167	154	3	3	100.0%	1.8%	1.9%
	20 - 99	16	19	0	0		0.0%	0.0%
	100 +	0	0	0	0			
15 - 17	Construction	10,664	10,659	1,043	970	93.0%	9.8%	9.1%
	0 - 19	10,206	10,185	1,032	959	92.9%	10.1%	9.4%
	20 - 99	420	440	11	11	100.0%	2.6%	2.5%
	100 +	38	34	0	0		0.0%	0.0%
20 - 39	Manufacturing	8,638	8,923	557	503	90.3%	6.4%	5.6%
	0 - 19	5,481	5,725	540	469	86.9%	9.9%	8.2%
	20 - 99	2,167	2,184	16	26	162.5%	0.7%	1.2%
	100 +	990	1,014	1	8	800.0%	0.1%	0.8%
40 - 49	Trns, Com, & P.U	4,821	4,866	517	479	92.6%	10.7%	9.8%
	0 - 19	4,007	4,080	511	466	91.2%	12.8%	11.4%
	20 - 99	695	669	6	13	216.7%	0.9%	1.9%
	100 +	119	117	0	0		0.0%	0.0%
50 - 51	Wholesale Trade	9,468	9,642	777	634	81.6%	8.2%	6.6%
	0 - 19	8,286	8,447	774	632	81.7%	9.3%	7.5%
	20 - 99	1,095	1,105	3	2	66.7%	0.3%	0.2%
	100 +	87	90	0	0		0.0%	0.0%
52 - 59	Retail Trade	25,638	25,833	2,031	1,689	83.2%	7.9%	6.5%
	0 - 19	21,845	21,933	1,897	1,566	82.6%	8.7%	7.1%
	20 - 99	3,398	3,468	129	113	87.6%	3.8%	3.3%
	100 +	395	432	5	10	200.0%	1.3%	2.3%
60 - 69	Fin, Ins, R. E.	7,651	7,861	569	501	88.0%	7.4%	6.4%
	0 - 19	6,831	7,024	564	494	87.6%	8.3%	7.0%
	20 - 99	692	696	5	7	140.0%	0.7%	1.0%
	100 +	128	139	0	0		0.0%	0.0%
70 - 89	Services	27,718	28,137	2,711	2,366	87.3%	9.8%	8.4%
	0 - 19	25,019	25,335	2,666	2,309	86.6%	10.7%	9.1%
	20 - 99	2,085	2,165	36	52	144.4%	1.7%	2.4%
	100 +	614	637	9	5	55.6%	1.5%	0.8%

SOURCE: DILHR U.C. FILES

TABLE 3
Private Employers, Firms, New Firms, and New Firm Mortality By 2-Digit SIC in Wisconsin: 1985-86

SIC		March 1985 Employed	March 1985 Firms	New in 1985	Survived One Year	Percent New	Mortality Rate
ALL	TOTAL PRIVATE FIRMS	1,556,689	9,559	8,361	7,103	87.5%	15.0%
01	Agriculture, Crops	3,525	407	16	15	3.9%	6.3%
02	Agriculture, Livestock	1,643	153	12	10	7.8%	16.7%
07	Agriculture, Services	6,490	1,104	121	110	11.0%	9.1%
08	Forestry	143	23	2	2	8.7%	0.0%
09	Fishing, Hunt., Trap.	48	11	2	1	18.2%	50.0%
10-14	Mining	1,232	183	3	2	1.6%	33.3%
15	Bldg. Construction	14,249	2,854	328	269	11.5%	18.0%
16	Other Construction	4,720	694	48	27	6.9%	43.8%
17	Trade Contractors	32,608	7,116	667	529	9.4%	20.7%
20	Food & Kindred Prod.	55,879	967	32	28	3.3%	12.5%
21	Tobacco Mfg.	5	1	0	0	0.0%	
22	Textile Mill Prod.	4,170	37	2	2	5.4%	0.0%
23	Apparel	5,857	160	15	14	9.4%	6.7%
24	Lumber & Wood Prod.	21,191	1,038	89	80	8.6%	10.1%
25	Furniture & Fixtures	9,745	209	22	20	10.5%	9.1%
26	Paper & Allied Prod.	47,161	227	9	9	4.0%	0.0%
27	Printing & Publishing	37,607	1,199	98	93	8.2%	5.1%
28	Chemicals & Allied	9,801	241	15	15	6.2%	0.0%
29	Petroleum	303	26	2	1	7.7%	50.0%
30	Rubber & Plastics Prod.	22,246	339	27	21	8.0%	22.2%
31	Leather & Leather Prod.	7,556	99	2	2	2.0%	0.0%
32	Stone, Clay & Glass	6,773	342	26	24	7.6%	7.7%
33	Primary Metal	18,549	203	4	4	2.0%	0.0%
34	Fabricated Metal	51,284	869	34	31	3.9%	8.8%
35	Nonelec. Machinery	102,383	1,754	116	105	6.6%	9.5%
36	Electical Equip.	50,311	337	20	16	5.9%	20.0%
37	Transport Equip.	29,516	152	12	11	7.9%	8.3%
38	Instruments	11,443	158	7	7	4.4%	0.0%
39	Misc. Manufacturing	1,061	280	25	23	8.9%	8.0%
41	Local Transportation	11,828	444	20	17	4.5%	15.0%
42	Motor Freight	31,682	3,020	395	313	13.1%	20.8%
44	Water Transport	534	90	9	8	10.0%	11.1%
45	Air Transport	2,389	113	8	7	7.1%	12.5%
46	Pipelines	159	5	0	0	0.0%	
47	Transport Services	3,217	412	53	45	12.9%	15.1%
48	Communication	19,342	559	23	23	4.1%	0.0%
49	Utilities	17,026	178	9	9	5.1%	0.0%

- continued -

TABLE 3
Private Employers, Firms, New Firms, and New Firm Mortality By 2-Digit SIC in Wisconsin: 1985-86

- continued -

SIC		March 1985 Employed	Firms	New in 1985	Survived One Year	Percent New	Mortality Rate
50	Wholesale, Durable Goods	54,486	5,817	504	428	8.7%	15.1%
51	Wholesale, Nondur. Goods	42,726	3,651	273	236	7.5%	13.6%
52	Bldg Material Stores	15,551	1,673	67	61	4.0%	9.0%
53	Gen. Merchandise	46,806	731	34	29	4.7%	14.7%
54	Food Stores	51,380	2,321	146	121	6.3%	17.1%
55	Automotive Dealers	36,604	3,549	212	179	6.0%	15.6%
56	Apparel Stores	15,406	1,712	155	139	9.1%	10.3%
57	Furniture Stores	12,157	1,727	173	143	10.0%	17.3%
58	Eating & Drinking Places	126,325	9,023	872	730	9.7%	16.3%
59	Misc. Retail Stores	42,504	4,902	372	327	7.6%	12.1%
60	Banking	27,737	613	4	4	0.7%	0.0%
61	Credit Agencies	14,009	848	27	25	3.2%	7.4%
62	Brokers	3,545	221	35	30	15.8%	14.3%
63	Insurance Carriers	32,049	638	29	24	4.5%	17.2%
64	Insurance Agents	8,656	2,035	196	172	9.6%	12.2%
65	Real Estate	8,656	2,035	246	216	12.1%	12.2%
66	Combined Real Est., Ins.	199	70	1	1	1.4%	0.0%
67	Holding Offices	1,625	271	31	23	11.4%	25.8%
70	Hotels, Lodging Places	17,180	1,225	74	64	6.0%	13.5%
72	Personal Services	23,289	3,621	339	286	9.4%	15.6%
73	Business Services	59,587	4,069	696	590	17.1%	15.2%
75	Automotive Services	11,320	2,125	253	204	11.9%	19.4%
76	Misc. Repair Services	4,097	987	111	94	11.2%	15.3%
78	Motion Pictures	2,147	198	14	11	7.1%	21.4%
79	Amusement & Recreation	15,752	1,520	108	88	7.1%	18.5%
80	Health Services	148,331	6,370	301	283	4.7%	6.0%
81	Legal Services	10,693	1,827	113	97	6.2%	14.2%
82	Educational Services	20,403	212	19	17	9.0%	10.5%
83	Social Services	26,293	1,102	81	72	7.4%	11.1%
84	Museums, Galleries	345	31	0	0	0.0%	
86	Membership Org.	16,302	1,628	49	48	3.0%	2.0%
88	Private Households	1,639	1,053	378	319	35.9%	15.6%
89	Misc. Services	15,214	1,750	175	149	10.0%	14.9%
	TOTAL	1,556,689	9,559	8,361	7,103	87.5%	15.0%

Source: DILHR UC Master File

B. WISCONSIN'S AGRICULTURAL ECONOMY:

1. Current Status of Wisconsin Agricultural Economy

Exactly one-half of Wisconsin's 35 million acres of land is in farms (Felstehausen, 1986). Known as a producer of grains, processed vegetables and dairy products, Wisconsin had 83,000 farms in 1985 which generated over $5 billion in gross farm income. While net farm income made up only 3% of Wisconsin's $60 billion total personal income, the agricultural economy has been closely linked to the non-farm economy. Nationally some 29% of the jobs in non-metropolitan counties were agriculturally related and personal income generated by farming has been of declining importance (Pulver, 1986). In 1982, U.S. farm earnings declined to only 1.8% of total personal income; farm earnings were nearly 10% of total U.S. personal income in the late 1940s. In 1980, farming generated 5.4% of total personal income in Wisconsin while manufacturing and services provided approximately 25% and 33%, respectively (McCarthy (2), 1987).

In 1985, Wisconsin had 1.7 million households, 26% of which were in rural areas. Only 50,000 farm operators (about 10% of all rural households) depended primarily on farming for income (Felstehausen, Op. Cit.). Employment in agriculture in Wisconsin over the past seven years is seen below in Table 1. Nationally, agricultural employment declined from 19% of the total U.S. labor force in 1940 to 3% of the total in 1980 (McCarthy (1), 1987).

Table 1
WISCONSIN AGRICULTURAL EMPLOYMENT: 1980-1986[1]

	Employed In Agriculture	Total Employed in Wisconsin	% of Total Employed in Agriculture
1980	146,419	2,188,500	6.7%
1981	156,003	2,225,500	7.0%
1982	158,072	2,218,800	7.1%
1983	131,078	2,226,000	5.9%
1984	141,875	2,253,000	6.3%
1985	143,834	2,251,900	6.4%
1986	111,930	2,273,500	4.9%

[1] NOTE: Employment figures are monthly estimates for August of each year.

SOURCE: Wisconsin Department of Industry, Labor and Human Relations, CES-790 Series.

Income from off-farm employment has been cited as the life-blood of many farming operations. Nationally, off-farm employment provides income for about 60% of all farm families (Dorner, 1986). Some 30,000 of Wisconsin's 83,000 farming households depended primarily upon off-farm income sources in 1985. Other economists found that over 50% of Wisconsin dairy farm families had an operator or spouse working off-farm in 1982 (Salant et al. in McCarthy (2), 1987). The Wisconsin Farm Operator Household Survey taken during the years of 1981-85 revealed that off-farm income exceeded net farm business income in each year and was continually growing throughout the period (Jesse, 1987).

The dependence on off-farm income can be seen as being both a positive and negative factor for farming and for the rest of the rural economy. Off-farm employment provides another source of capital for farmers who cannot entirely depend on farm earnings. Industries in and near rural counties benefit from the labor supplied by part-time farmers. This interdependency appears to have several mutually beneficial aspects; however, the nature of some rural areas' industrial bases has led to some mutually detrimental conditions. Many rurally-located manufacturing industries produce the inputs used in agriculture, i.e., equipment and chemicals, and are sensitive to changes in the farm sector. Thus when a downturn in agricultural activity occurs, a secondary effect reduces the demand for farm-related manufactured goods and the opportunities for off-farm employment.

Despite farming's relatively small employment base (4.9% of total employment in Wisconsin in 1985) and relatively small share of personal income (3% of total personal income in Wisconsin in 1985), it is closely linked to the non-farm economy. An input-output analysis done in North Dakota examined the economic linkages between its industrial sectors (Hertsgaard, et al., 1985). Input-output analysis is a statistical method which results in a table of interdependence coefficients which indicate the total output needed for each industry's export that is required from each other industry. The table's "gross receipts multipliers" are indicators which reveal each industry's income-producing benefit to all industries based on their exports. For each dollar of income received from the export of livestock from North Dakota, $3.49 were spent in the state, resulting in a total of $4.49 of income to all industries. Multipliers for other ag-industries were also high; crop producers had a multiplier of 3.69 and agricultural processing and miscellaneous manufacturing had one of 4.45. The multipliers of ag-related industries were higher than all other industries' multipliers in North Dakota, indicating the sensitivity of the non-farm economy to farming being much greater than to other industries. While farming's share of total labor and income is small, its dependence on several input industries makes the consequences of farm decline on the rest of the economy quite important.

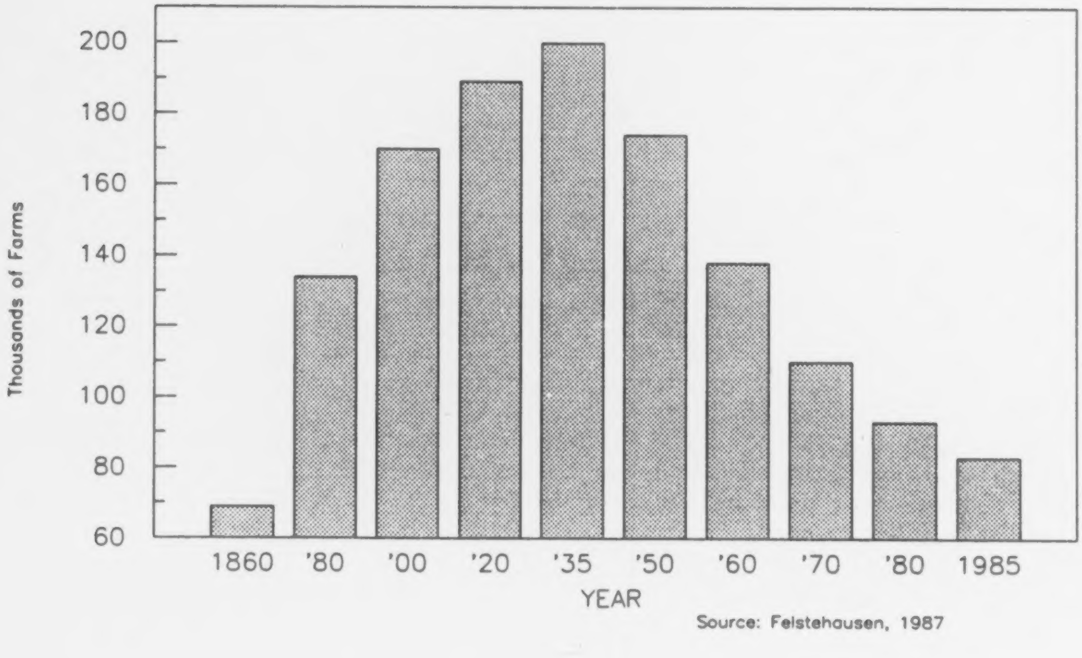
2. Recent Changes in the Agricultural Economy

University of Wisconsin agricultural economists William Saupe and Ed Jesse described 1986 as the fifth year of intensifying financial stress in the Wisconsin farm economy (Jesse, 1987, Op. Cit.). Low farm incomes, high debts, high real interest rates and declining equity have all affected Wisconsin's changing agricultural economy negatively.

The most striking changes in farming statewide have been seen in the number of farmers, the number of farms, the value of farm real estate, the average farm size and in farms' financial characteristics. Employment in farming statewide decreased by 24% between 1980 and 1986; 1980 agricultural employment statewide was 146,419 (in August) and was 111,930 in August of 1986 (DILHR, CES-790). The change in the number of farms over the past 125 years has been dramatic. Figure 1, below, shows a peak of 200,000 farms in Wisconsin in 1935, declining to 83,000 in 1985. The average size of farms has increased during the past 25 years. In 1950, there was an average of 129 acres per farm were operated which rose by 50% to 195 acres in 1975 (Dorner, Op. Cit.). The average number of cows on a sample of dairy farms rose from 16.8 to 36.5, an increase of 117% over 25 years (Ibid.) Farm ownership patterns in Wisconsin have also changed. In a sample of farms observed between 1950 and 1975, full-ownership of farms declined from 64% to 55% of the total; part-ownership of farms rose from 15% to 31%, and farm renters decreased from 12% to 3% of all farms in the sample (Ibid.).

FIGURE 1

WISCONSIN FARMS
1860 - 1985



Source: Felstehousen, 1987

The change in farm real estate values has also been noted as a significant symptom of agricultural decline. The period of 1977-86 in Wisconsin began with an average value of land and buildings per acre of $598. That average rose to a peak of $1,152 per acre in 1981 and declined to $711 per acre in 1986 (Jesse, 1987). Evidence found in national studies parallels this pattern of farm land values peaking in 1981 after a dramatic rise since 1973 (Doerning, et al., 1986). Research found that the largest decreases in farm values between 1981 and 1986 were in the midwest states, as seen in Table 2.

Table 2

Percent Change in Average Value of Farm Real Estate Per Acre in Selected States: 1981-1986

	1981-86	1985-86
State	Percent Change	Percent Change
Iowa	-59%	-21%
Minnesota	-55%	-26%
Indiana	-50%	-16%
Illinois	-49%	-13%
Ohio	-49%	-10%
Wisconsin	-41%	-16%
Michigan	-31%	-11%

(SOURCE: Doerning, et al., Op. Cit.)

Jesse also found that Wisconsin's total farm equity (net worth) continually declined over the 1981-86 period from $26.5 billion to $16.9 billion (1986, Op. Cit.). Total farm debt over the period hovered around $7 billion, while total farm assets decreased from $33.4 billion to $24 billion. Most of the farm asset decline was attributed to declining real estate values; farm household assets, bonds investments, bank deposits and crop values actually increased in value over the period.

Salant, et al. (1987), found in a random sample of Wisconsin farms in 1983 that farm asset and debt information yielded a non-viability indication for 47% of the sampled dairy farms. These estimates were based on 1982 data when the farm crisis was just beginning. "Non-viability" was determined if a farmer's annual aggregate income from farming, off-farm employment and other non-farm income was less than his/her annual financial obligations. Non-viability was more evident in farms with larger sales volumes and in full-time operations. Through a simulation technique to estimate how many of the 1982 surveyed farms would be both non-viable and technically insolvent in 1986, the researchers estimated 11% of the surveyed farms would be in severe financial trouble in 1986.

Debt-to-asset ratios are also commonly used to describe the farming industry's financial condition. The Agricultural Finance Survey, done in 1984 and 1986 by the Wisconsin Agricultural Reporting Service, found that in 1981 the average farm's debt-to-asset ratio was 19%. By 1984, that ratio had increased to 34% and declined slightly to 33% in 1986. Of the farms with debt, over one-fourth had a debt-to-asset ratio of 40% or more and 7% had ratios of 70% and higher. The survey revealed that over 4% of all Wisconsin farmers expected to quit farming in 1986, with 10% or more expecting to quit in 1987. The survey also found that an estimated 3,000 farms went out of business between 1984 and 1985.

The causes of Wisconsin's agricultural downturn are varied and inter-related. Department of Agriculture, Trade and Consumer Protection (DATCP) Secretary Howard Richards describes Wisconsin farm problems as being either economic or organizational. In a recent article, "Testimony to Troubles: Farming on the Edge," Richards listed excess debt, asset devaluation, excess capacity, and lack of market control and profitability as the major economic causes of farmers' problems (Richards, 1986). Other economists count low interest rates in the 1970s, advanced farming technology both here and abroad, and the rising value of U.S. currency and resulting trade imbalances as further economic causes of today's agricultural decline.

In terms of excess capacity, U.S. farmers' productivity grew 12 times faster than did other segments of our economy or than did agriculture in other countries of the world in the 1970s (Richards, Op. Cit.). In 1982, U.S. farmers' productivity was nearly double that of other countries' farmers. International trade embargoes in the 1970s told the rest of the world about the unreliability of U.S. farm products. Lowered crop prices due to oversupply and less demand from abroad due to the high value of the U.S. dollar resulted in some countries becoming agricultural exporters for the first time.

Profitability problems have been exacerbated by declining price levels and market control inefficiencies. Rapid increases in milk prices in the 1970s triggered an over-expansion of the dairy industry in the 1980s. Milk prices have declined by over $1.50 per hundredweight since 1981 (despite the dairy support programs) and 1986 corn prices were $0.75 per bushel less than in 1985. Farmers also lack significant market power in that they only receive about 30% of the retail value of their products (Richards, Op. Cit.). The agricultural marketing system claims the remaining 70%. As the trend continues to shift profits toward processors and distributors, consumers will benefit at the expense of farmers' profitability.

3. Expected Effects of Recent Agricultural Changes in Wisconsin

Agricultural economists in Wisconsin expect little improvement in our farm economy in 1987. The combination of low farm commodity prices and the further devaluation of farm assets (especially land) will deal a double blow to Wisconsin farmers. Commodity prices are expected to be close to their low 1986 levels, and milk prices will suffer two $0.25 per hundredweight cuts in the price support level in 1987 (Jesse, 1987, Op. Cit.) Reduced livestock marketings and participation in the whole-herd buyout program is expected to bring only limited price strength to these commodities in 1987.

The driving force of the farm economy, demand, is ultimately contingent upon export trade. Hopes of expanding foreign demand for U.S. farm products will dim as economic growth abroad stagnates, as the high debt levels in developing countries grow unabated and as the value of the U.S. dollar remains relatively high compared to other currencies. Despite a recent UW study which found that Wisconsin banks should have sufficient capital available for farm lending, continued lower prices will make lenders less willing to make farm loans in the future (Wisconsin Department of Development, 1987).

The degree of impact that the decline in farm activity will have on Wisconsin's economy can be seen by indicators of farm sensitivity on a county-by-county basis. Farming, despite its small employment base and small share of total personal income, is important in rural counties because of its non-farm economic linkages. Farmers purchase inputs such as fuel, equipment, tools and chemicals from producers. Farmers also supply inputs to agricultural processing industries such as cheese/milk plants, canneries, meat packing plants and grain dealers. Thus a slight change in farming will affect many industries on each end of the agricultural economy. The input-output analysis done in North Dakota demonstrated that for every dollar of agricultural export, an additional $3.59 was spent in the economy through linked industries and wages.

Many counties in Wisconsin have local economies which are relatively more sensitive to farming than other counties. Figure 2 shows 15 counties where 20% or more of total earned income came from farming in 1975-79 and another 13 counties which had 14%-20% of income from farming. Together, the 28 counties make up Wisconsin's agriculturally sensitive counties. Changes in farming will be felt most immediately in these counties because of their dependence on farm income. Salant et al. considered three types of employment in 1982 for their impact analysis: farm and forestry employment, employment in agricultural input firms and employment in agricultural processing firms. Collectively, the three employing activities had 494,860 workers in 1982 making up about 23% of the state's total employment. Over one-half of all workers in the agricultural input firms and agricultural processing firms worked in metropolitan counties.

As the farm economy continues to decline, the farm input firms will be negatively affected to a greater extent than will the farm processing firms. Farmers can cut back on inputs long before they can stop selling products to the processors. Farm input firms are especially sensitive to farmers' deferral of capital-goods purchases, farmers' lowered debt repayment capacity due to lower prices and to the effects of federal farm commodity programs. When farm programs encourage farmers to idle a portion of their cropland, they will be buying less seed, fuel, fertilizer, etc. Likewise, as lower dairy price supports and the whole-herd buyout program take effect, dairy farmers may shift to some other farming activity and buy a different mix of inputs, thereby upsetting local purchasing patterns.

Agricultural processing firms are relatively less likely to suffer the effects of a farming downturn. Such firms are not as directly affected by farmers' profitability levels; regardless of their financial condition, farmers ultimately need to have most of their products processed. Fluctuations in federal farm programs will also affect ag-processors as farm products vary in quantity from buy-outs or crop reduction or price support programs.

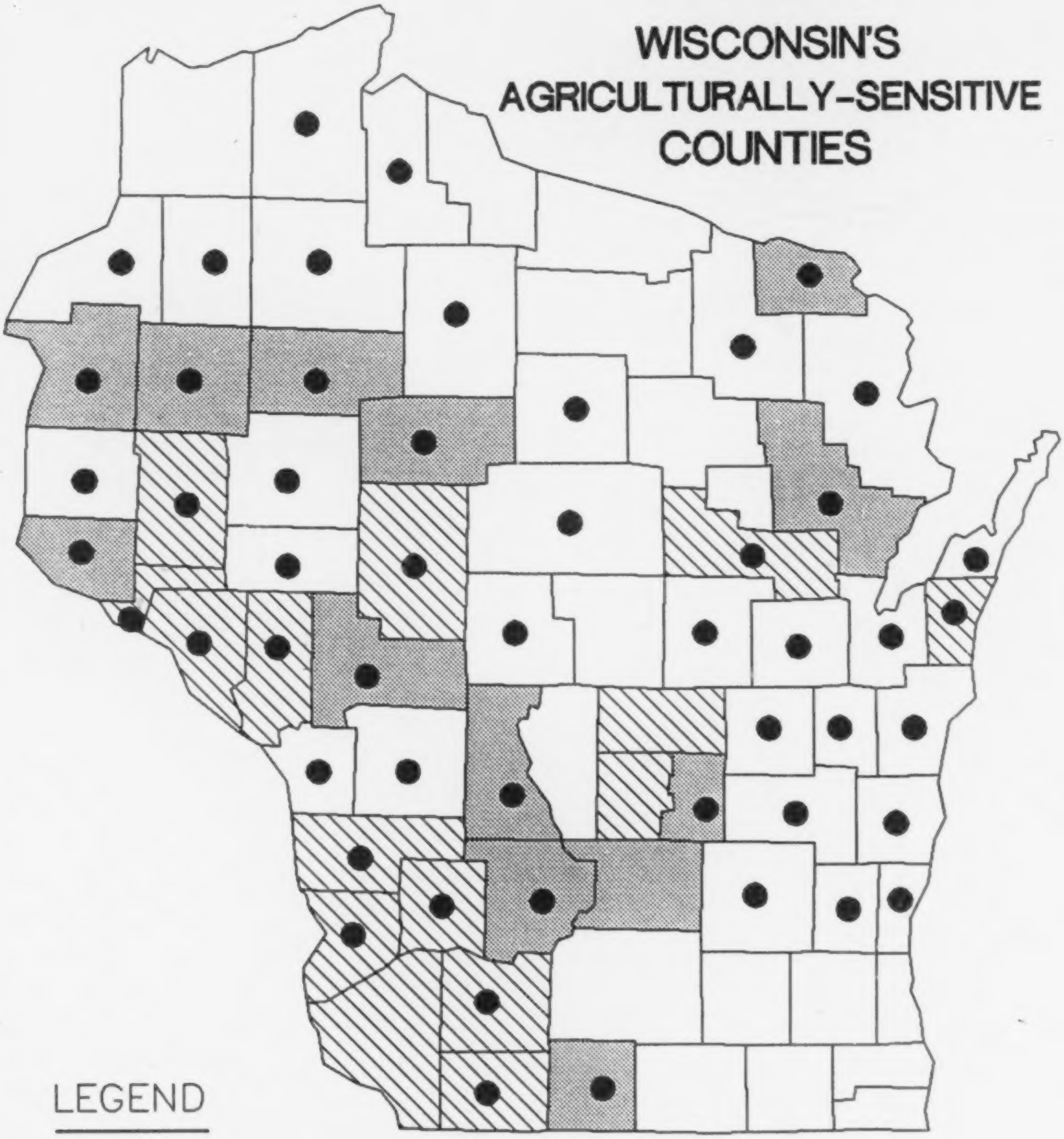
Dairy sensitive counties, indicated in Figure 2, made up 52 of Wisconsin's 72 counties and nearly all of the agriculturally sensitive counties. Given the impending dairy price support cuts (two cuts of $0.25 per hundred-weight of milk in 1987), agricultural change is expected to be especially acute in the southwest and west central rural counties. Estimates from the University of Wisconsin-Madison Agricultural Economics Department indicate that between 2,000 and 7,000 (2.5% to 9% of the total) farmers will have liquidated their farms for financial reasons in 1986 (Jesse, 1986, Op. Cit.).

Given the Salant et al. estimate of 47% of dairy farms being financially non-viable in 1982, the observed dependence on off-farm employment by farmers and the strong inter-industry linkages, the current decline in farming can be expected to have far reaching effects in many rural counties. Much of the research on the farm/non-farm industrial linkages in rural counties follows two themes. One theme examines the impacts that the downturn in agricultural output and value of farm goods sold have had on communities in rural counties, while the other discusses a synergistic link between communities and farms. Bultena et al. summarized several studies which identified sociological impacts of agricultural change. The research generally has shown that the perceived quality of life, social interaction and citizen participation in community organizations have been adversely affected by a decline in the number of farms and by an increased prominence of larger-than-family farms.

The economic impacts of agricultural change on individuals, households and businesses have been studied with input-output analysis (noted from North Dakota, above), with aggregate data analysis and with micro-data analysis from surveys. Flora et al. found in one county in Missouri that a steady decline in retail establishments had occurred since 1948 because of a long-term trend toward larger farms and the decline in the number of farms and farmers. The researchers found non-agricultural firms, i.e., automobile dealers, hardware and appliance stores and furniture stores, to be affected negatively by the farm crisis (Ibid.) Other researchers found that size of farm was a significant factor in impact-assessment because larger-than-family farms were more likely to by-pass local merchants when purchasing farm inputs and thus not contribute to local economic development (Bultena, et al., Op. Cit.).

FIGURE 2

WISCONSIN'S AGRICULTURALLY-SENSITIVE COUNTIES



LEGEND

▨ Farm Dependent Counties
(20% or more of total earned income from farming in 1975–79)

░ Farm Important Counties
(14–20% of total earned income from farming in 1975–79)

● Dairy–Intensive Counties
(at least 50% of total farm sales from dairying in 1982)

Source: UW–Madison, Dept. of Ag–Economics, 1987

While the demise of rural communities' industrial bases may be triggered by an agricultural downturn, economists have found that farm sector vitality has been much more dependent upon support from the nonfarm sector than has nonfarm sector vitality been dependent upon support from the farm sector (Korsching and Stoffernan in Molnar, 1986). Research conducted in Iowa found that the vitality of the nonfarm sector and the quality of life of the population were not strongly related to a structure of agriculture consisting of many small farms (Ibid.). In highly farm dependent counties in the U.S., researchers have found that retail and service businesses rise and fall with farm income changes (Pulver, Op. Cit.).

Other economic impacts of agricultural change have been described by Rodefeld (1978) as including: loss of off-farm employment opportunities, rural population out-migration, a greater likelihood of monopoly and collusion (over food prices) in the market place, higher food prices, and possibly lower productivity and worker efficiency in the larger-than-family farms. A 1986 study of 46 farmers in rural farming-dependent counties in Missouri found that 40% had to leave their homes after quitting farming in the post-1980 period (Heffernan and Heffernan, 1986). Salant et al. also indicated relatively higher unemployment rates and therefore fewer off-farm employment opportunities in the agriculturally sensitive counties in Wisconsin as seen in Figure 2. Hence the continuation of the decline in agricultural employment and the persistence of high unemployment is expected to maintain the current economic and sociological distress found in many of Wisconsin's rural counties.

The other theme in the farm-community impact research discusses a synergistic link between communities and farms. Shaffer et al. (1986) focused their research on the influence of changes in rural communities on farming. They believe that fewer off-farm employment opportunities and the persistence of high unemployment in rural counties exacerbate agricultural decline. Farmers' dependence on off-farm employment would forewarn of impending problems for farm operations resulting from fewer non-farm jobs. Changes in non-farm industrial activity in rural counties have resulted from changes in global and national economic restructuring, changes in transportation and communication patterns and volume, changes in consumer preferences and changes in the socio-economic and demographic composition of rural populations. Thus as many other forces reduce the number of non-farm jobs in rural counties, many farms can be expected to suffer financially as off-farm sources of income are expected to weaken.

References

Bultena, Gordon, E. Hoiberg and P. Lasley.
Familial and Community Impacts of the Farm Crisis. Iowa State University, Ames, Iowa, 1986.(Research Proposal, Mimeographed.)

Doerning, Patrick B., G.J. Dittberner and G. Doerning.
"Government Options for Restructuring Agricultural Debt." *Wisconsin Academy Review*, December, 1986. Pages 37-42.

Dorner, Peter.
"The Changing Structure of Wisconsin Family Farming." *Wisconsin Academy Review*, December, 1986. Pages 26-28.

Felstehausen, Herman.
"Decline of Farming in Wisconsin." *Wisconsin Academy Review*, December, 1986. Pages 45-49.

Flora, Jan L., C.B. Flora, E. Gregory, and C. Thurnau-Nichol.
The Farm Crisis and Decatur County. Kansas State University, Manhattan, Kansas, 1986. (Staff Paper, Mimeographed.)

Gilbert, Jess and G.S. Thompson.
"Farm Crisis Response: University of Wisconsin-Madison Extension and Research." *Farm Crisis Response: Extension and Research Activities in the North Central Region*. The North Central Regional Center for Rural Development, Ames, Iowa, 1986.

Hertsgaard, Thor, F.L. Leistritz, A.G. Leholm and R.C. Coon.
The North Dakota Input-Output Model: A Tool for Measuring Economic Linkages. North Dakota State University, Fargo, North Dakota, 1986. (Staff Paper, Mimeographed.)

Jesse, Edward (editor).
Financial Status of Wisconsin Farming, 1986. University of Wisconsin-Madison, Department of Agricultural Economics, Madison, Wisconsin, 1986.

Status of Wisconsin Farming, 1987. University of Wisconsin-Madison, Department of Agricultural Economics, Madison, Wisconsin.

McCarthy, Mary.
(1) *Rural Labor Markets and Farm Labor Allocation*. University of Wisconsin-Madison, Department of Agricultural Economics, Madison, Wisconsin, 1987. (Staff Proposal, Mimeographed.)

(2) *Structural, Social and Economic Change in Non-Metropolitan Wisconsin; an Historical Overview, 1950-80*. University of Wisconsin-Madison, Department of Agricultural Economics, Madison, Wisconsin, 1987. (Staff Paper, Mimeographed.)

Molnar, Joseph J. (editor)
Agricultural Change, Consequences for Southern Farms and Rural Communities. Westview Press, Inc., Boulder Colorado and London, England, 1986.

Pulver, Glen C. and G.R. Rogers.
Changes in Income Sources in Rural America. University of Wisconsin-Madison, Department of Agricultural Economics, Madison, Wisconsin, 1986. (Staff Paper, Mimeographed.)

Richards, Howard C.
"Testimony to Troubles: Farming on the Edge." Wisconsin Academy Review, December, 1986. Pages 2-4.

Rodefeld, Richard D.
"The Nature, Magnitude and Consequences of Change in Farm Organizational, Occupational and Class Structure." Rural America; Causes, Consequences and Alternatives. Richard D. Rodefeld, editor. The C.V. Mosby Company, St. Louis, Missouri, 1987.

Salant, Priscilla, W. Saupe, B. Green and T. Carlin.
"Which Wisconsin Counties Will Be Affected Most By the Farm Crisis?" Economic Issues, No. 103, University of Wisconsin-Madison, Department of Agricultural Economics, Madison, Wisconsin. January, 1987.

Shaffer, Ron, P. Salant and W. Saupe.
Understanding the Synergistic Link Between Rural Communities and Farming. Staff Paper, No. 235. University of Wisconsin-Madison, Department of Agricultural Economics, Madison, Wisconsin.

Wisconsin Department of Development.
"Economic Development Issue Papers - Agriculture," prepared for the Governor's Northern Economic Development Conference, Rhinelander, Wisconsin, May 14-15, 1987.

C. CHANGES IN WISCONSIN'S SERVICE SECTOR

Little information has been published about the components of the service sector that have fueled the expansion from the recession. Standard labor market information publications have ignored this vibrant growing portion of our economy and traditionally have provided very detailed information about the goods producing industry, the declining portion of the economy.

Detailed information for the private service sector is available from the state's unemployment compensation records. This source does have one draw-back: a lag in reporting exists because of the specific time allowed for reporting by the state law. No additional detailed information on government employment levels, other than the normal federal, state and local categories, is available from this source. In this section of the report, we shall attempt to expand on the limited private service sector information previously released.

This report uses two primary sources of information: data from the Bureau of Labor Statistics, Current Employment Statistics (CES) program, which is collected by the Bureau of Labor Market Information in the Department of Industry, Labor and Human Relations, and data obtained from the Wisconsin Unemployment Compensation (UC) program in Wisconsin. Data from both sources are used to estimate nonfarm wage and salary (NFWS) data.

While similar, the two sources are not identical. Railroad industry data is not included in the UC data as it is not part of the state's UC program. In addition, UC coverage is not universal as some minor exclusions exist. Other minor differences also exist. All UC data used is annual average data. Detailed data is exclusively UC data, while industry group totals used in the first table of this section are CES data.

Wisconsin's service sector grew right through the recessions during the early 1980s. Minor declines occurred in three industry groupings. The transportation, communication and public utilities group, the trade group of the private sector portion and government of the public sector had minor declines in 1982 and/or 1983. The private service sector total and the combined private and public service sector total expanded through the recession(s).

The service sector industry groups have grown significantly with one minor exception[4] since the low point of the recession. On an annual-average basis, 126,900 additional service sector jobs existed in 1986 when compared with 1982. The private sector added 115,800 of these jobs, 91.3 percent of the total increase. Government accounted for 11,100; only 8.7 percent of the additional jobs in Wisconsin.

TABLE 1
EMPLOYMENT LEVELS IN SERVICE SECTOR INDUSTRY GROUPINGS
1979 - 1985 and April 1987

INDUSTRY NAME	1979	1980	1981	1982	1983	1984	1985	1986	4/87[1]
TC&PU[2]	92.2	92.1	92.3	89.4	88.1	91.9	94.2	92.9	92.8
Trade	441.2	436.8	432.4	428.9	433.3	452.8	465.1	477.8	490.1
F.I.R.E.[3]	90.3	93.3	95.0	95.8	98.6	101.3	103.8	107.8	110.6
Serv. & Misc.	351.9	364.2	374.9	381.5	388.6	404.4	419.0	432.9	445.5
Private Sector Total	975.6	986.4	993.7	995.6	1008.6	1050.4	1082.1	1111.4	1139.0
Govt.	310.1	321.1	318.0	314.1	312.5	314.7	320.6	325.2	325.8
Service Sector Total	1285.7	1307.5	1311.7	1309.7	1321.1	1364.1	1402.7	1436.6	1464.8
NFWS[5]Total	1960.2	1938.1	1923.2	1866.8	1864.6	1949.2	1983.1	2014.8	1051.5

Source: Current Employment Statistics, DILHR, Labor Market Information Bureau.

NOTES:

[1] Seasonally adjusted.
[2] TC&PU = Transportation, Communications and Public Utilities.
[3] F.I.R.E. = Finance, Insurance and Real Estate.
[4] The transportation, communication and public utilities group has declined slightly in recent years primarily because of the deregulation of the public telephone system.
[5] NFWS = Non-form Wage and Salary

There are so many varied and distinct activities in the service sector that the best way to inform the employment and training community about it is simply to list the activities. Listing the activities by employment and number and percentage of job gains and losses illustrates the wide ranging nature of and changes in the service sector. There are 42 types of retail trade specialities, 68 service activities, 31 finance, insurance and real estate activities, 30 transportation, communication and public utility activities, and 18 wholesale trade specialities listed.

1. Retail Trade

In the three years from the bottom of the recession to 1985, the retail trade job level increased by 33,780 or 10.2% in Wisconsin. Eating and drinking establishments provided almost 40.0% of the additional jobs. The fastest growing retail trade speciality was the women's accessory and speciality stores group which increased its number of jobs from 319 to 462, an increase of 44.8% over the three-year period.

Nine of the forty detailed retail trade industries declined over the 1982-1985 period. The largest number of jobs lost, 373, occurred in the hardware stores industry. In addition, 290 jobs were lost in retail bakeries. The largest percentage lost in jobs occurred in the furriers and fur shop group where jobs declined by 8.7%. Only nine jobs were lost in that industry. The following five tables depict recent behavior in service sector industry jobs.

Table 2
RETAIL TRADE INDUSTRY GROUP EMPLOYMENT
Ranked by Job Level

RANK	CODE	DETAILED INDUSTRY TITLE	1985 Job Level	Additional Jobs 1983-1985	Percentage Change 1983-1985
1	58	Eating and Drinking Places	134,725	13,165	-10.8%
2	541	Grocery Stores	45,717	1,911	4.4%
3	531	Department Stores	41,569	3,572	9.4%
4	551	New and Used Car Dealers	17,204	3,007	21.2%
5	554	Gas Service Stations	14,443	963	7.1%
6	594	Misc. Shopping Goods Stores	12,503	1,172	10.3%
7	591	Drug Stores	10,803	318	3.0%
8	596	Nonstore Retailers	10,268*	2,470*	31.7%*
9	521	Lumber and Other Building Materials Stores	8,239	1,798	27.9%
10	562	Women's Ready-To-Wear Stores	6,249	907	17.0%
11	571	Furniture, Home Furnishings and Equipment Stores, Except Appliances	5,756	261	4.7%
12	599	Retail Stores, NEC	5,600	1,097	24.4%
13	525	Hardware Stores	5,416	- 373	- 6.4%
14	573	Radio, Television & Music Stores	5,041	1,488	41.9%
15	533	Variety Stores	4,394	- 48	- 1.1%
16	546	Retail Bakeries	3,940	- 290	- 6.9%
17	566	Shoe Stores	3,939	257	7.0%
18	598	Fuel and Ice Dealers	2,929	201	7.4%
19	553	Auto and Home Supply Stores	2,904	580	25.0%
20	592	Liquor Stores	2,886	234	7.5%
21	539	Misc. General Merchandise Stores	2,777	242	9.5%
22	565	Family Clothing Stores	2,057	- 95	- 4.4%
23	572	Household Appliance Stores	1,811	74	4.3%
24	561	Men and Boys' Clothing	1,725	- 85	- 4.7%
25	593	Used Merchandise Stores	1,509	383	34.0%
26	526	Retail Nurseries, Lawn and Garden Stores	1,484	203	15.8%
27	542	Meat and Fish Markets Including Freezer Provisioners	1,142	- 5	**
28	523	Paint, Glass & Wallpaper Stores	1,094	143	15.0%
29	552	Used Car Dealers	973	162	20.0%
30	555	Boat Dealers	951	226	31.2%
31	544	Candy, Nut & Confectionary Stores	815	174	27.1%
32	545	Dairy Product Stores	693	- 41	- 5.7%
33	569	Misc. Apparel & Accessory Stores	653*	111*	20.5%*
34	557	Motorcycle Dealers	615	29	4.9%
35	549	Miscellaneous Food Stores	549	67	13.9%
36	563	Women's Accessory and Specialty Stores	462	143	44.8%
37	527	Mobile Home Dealers	353	- 10	- 2.8%
38	543	Fruit Stores & Vegetable Markets	343	9	2.7%
39	564	Children's and Infantswear Stores	342	13	4.0%
40	556	Recreation & Util. Trailer Dealers	247	59	31.4%
41	568	Furriers and Fur Shops	95	- 9	- 8.7%
42	559	Automotive Dealers NEC	92	11	13.6%

*Adjusted for coding change.

**Less than 0.05 %

SOURCE: WIS DILHR, CES data.

TABLE 3
RETAIL TRADE INDUSTRY GROUP EMPLOYMENT

Ranked by Number of Additional Jobs

(One Hundred or More Jobs)

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	Jobs Gained 1982-85	Percent of All Jobs Gained	Percentage Gain 1982-85
		TOTAL	365,295	33,780	100.0%	10.2%
1	58	Eating and Drinking Places	134,725	13,165	39.0%	10.8%
2	531	Department Stores	41,569	3,572	10.6%	9.4%
3	551	New and Used Car Dealers	17,204	3,007	8.9%	21.2%
4	596	Nonstore Retailers	10,268*	2,470*	7.3%	31.7%*
5	541	Grocery Stores	45,717	1,911	5.6%	4.4%
6	521	Lumber and Other Building Materials Stores	8,239	1,798	5.3%	27.9%
7	573	Radio, Television and Music Stores	5,041	1,488	4.4%	41.9%
8	594	Misc. Shopping Goods Stores	12,503	1,172	3.5%	10.3%
9	599	Retail Stores NEC	5,600	1,097	3.2%	24.4%
10	554	Gas Service Stations	14,443	963	2.9%	7.1%
11	562	Women's Ready-To-Wear Stores	6,249	907	2.7%	17.0%
12	553	Automotive and Home Supply Stores	2,904	580	1.7%	25.0%
13	593	Used Merchandise Stores	1,509	383	1.1%	34.0%
14	591	Drug Stores	10,803	318	0.9%	3.0%
15	571	Furniture, Home Furnishings and Equipment Stores Except Appliances	5,756	261	0.8%	4.7%
16	576	Shoe Stores	3,939	257	0.8%	7.0%
17	539	Miscellaneous General Merchandise Stores	2,777	242	0.7%	9.5%
18	592	Liquor Stores	2,886	234	0.7%	7.5%
19	555	Boat Dealers	951	226	0.7%	31.2%
20	526	Retail Nurseries, Lawn and Garden Stores	1,484	203	0.6%	15.8%
21	544	Candy, Nut and Confectionary Stores	815	174	0.5%	27.1%
22	563	Women's Accessory and Speciality Stores	462	143	0.4%	44.8%
23	523	Paint, Glass & Wallpaper Shops	1,094	143	0.4%	15.0%
24	569	Miscellaneous Apparel and Accessory Shops	653	111*	0.3%	20.5%

*Adjusted for coding change.

SOURCE: WIS DILHR, CES data.

TABLE 4
RETAIL TRADE GROUP JOB LOSS

Ranked by Number of Jobs Lost

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	JOBS LOST 1982-85	PERCENTAGE DECLINE 1982-85
1	525	Hardware Stores	5,416	- 373	- 6.4%
2	546	Retail Bakeries	3,940	- 290	- 6.9%
3	565	Family Clothing Stores	2,057	- 95	- 4.4%
4	561	Men & Boys' Clothing Stores	1,725	- 85	- 4.7%
5	533	Variety Stores	4,394	- 48	- 1.1%
6	545	Dairy Product Stores	693	- 41	- 5.7%
7	527	Mobile Home Dealers	353	- 10	- 2.8%
8	568	Furriers and Fur Shops	95	- 9	- 8.7%
9	542	Meat & Fish Markets Including Freezer Provisioners	1,142	- 5	*

*Less than 0.05 percent.

SOURCE: WIS DILHR, CES data.

TABLE 5
RETAIL TRADE INDUSTRY GROUP EMPLOYMENT

Ranked by Percentage of Jobs Gained

(Over Ten Percent)

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	ADDITIONAL JOBS 1983-1985	PERCENTAGE CHANGE 1983-1985
1	563	Women's Accessory and Specialty Stores	462	143	44.8%
2	573	Radio, Television and Music Stores	5,041	1,488	41.9%
3	593	Used Merchandise Stores	1,509	383	34.0%
4	596	Nonstore Retailers	10,268*	2,470*	31.7%
5	556	Recreation and Utility Trailer Dealers	247	59	31.4%
6	555	Boat Dealers	951	226	31.2%
7	521	Lumber and Other Building Material Stores	8,239	1,798	27.9%
8	544	Candy, Nut $ Confectionary Stores	815	174	27.1%
9	553	Auto and Home Supply Stores	2,904	580	25.0%
10	599	Retail Stores NEC	5,600	1,097	24.4%
11	551	New and Used Car Dealers	17,204	3,007	21.2%
12	569	Misc. Apparel & Accessary Stores	653*	111*	20.5%
13	552	Used Car Dealers	973	162	20.0%
14	562	Women's Ready-To-Wear Stores	6,249	907	17.0%
15	526	Retail Nurseries, Lawn and Garden Supply Stores	1,484	203	15.8%
16	523	Paint, Glass & Wallpaper Stores	1,094	143	15.0%
17	549	Miscellaneous Food Stores	549	67	13.9%
18	559	Automotive Dealers NEC	92	11	13.6%
19	58	Eating & Drinking Establishments	134,725	13,165	10.8%
20	594	Misc. Shopping Goods Stores	12,503	1,172	10.3%

*Adjusted for coding change.

SOURCE: WIS DILHR, CES data.

TABLE 6
RETAIL TRADE INDUSTRY GROUP EMPLOYMENT

Ranked by Percentage of Jobs Lost

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	JOBS LOST 1982-85	PERCENTAGE DECLINE 1982-85
1	568	Furriers and Fur Shops	95	- 9	- 8.7%
2	546	Retail Bakeries	3,940	- 290	- 6.9%
3	525	Hardware Stores	5,416	- 373	- 6.4%
4	545	Dairy Product Stores	693	- 41	- 5.7%
5	561	Men & Boys' Clothing	1,725	- 85	- 4.7%
6	565	Family Clothing Stores	2,057	- 95	- 4.4%
7	527	Mobile Home Dealers	353	- 10	- 2.8%
8	533	Variety Stores	4,394	- 48	- 1.1%
9	542	Meat & Fish Markets Including Freezer Provisioners	1,142	- 5	*

*Less than 0.05 percent.

SOURCE: WIS DILHR, CES data.

2. Service and Miscellaneous Industry Employment

The most recent estimate of job levels available from the Current Employment Statistics, (CES) program (April, 1987, seasonally adjusted) estimates a job level of 445,500 for the service and miscellaneous industry group. This represents a gain of 64,000 jobs or 16.8% from the 381,500 reported for all of 1982.

Using the annual average UC data, we find Personnel Supply Services firms added the largest number of jobs, 8,795, between 1982 and 1985. Health and Allied Services not elsewhere classified increased the most: 134.6%. Personnel Supply Service firms also increased by more than 100.0 percent over the three-year period.

Hospitals reported a significant decline in their job total, declining by 8,501 jobs. It is important to note in recent months hospital job levels began increasing again. Political Organizations reported the greatest percentage job loss at 57.8%; that loss was only 52 jobs, however.

TABLE 7
SERVICE AND MISCELLANEOUS INDUSTRY GROUP EMPLOYMENT

Industries Ranked by Job Level

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	806	Hospitals	66,764	75,265	- 8,501	- 11.3%
2	805	Nursing & Personal Care Facilities	36,897	34,293	2,604	7.6%
3	801	Offices of Physicians	23,665	20,947	2,718	13.0%
4	739	Miscellaneous Business Services	23,198	18,505	4,693	25.4%
5	701	Hotels, Motels & Tourist Courts	19,745	19,182	563	2.9%
6	736	Personnel Supply Services	16,639	7,844	8,795	112.1%
7	802	Offices of Dentists	11,141	10,076	1,065	10.6%
8	81	Legal Services	10,907	9,639	1,268	13.2%
9	723	Beauty Shops	10,751	8,717	2,034	23.3%
10	822	Colleges & Universities	10,682	11,282	- 600	- 5.3%
11	734	Services to Dwellings & Other Bldg.	10,585	8,188	2,395	29.3%
12	799	Misc. Amusement Recreation Serv.	10,232	9,641	591	6.1%
13	839	Social Services NEC	8,266	8,316	- 50	- 0.6%
14	864	Civic, Social & Fraternal Assoc.	8,007	7,078	920	13.1%
15	753	Auto Repair Shops	7,730	6,136	1,594	26.0%
16	891	Engineering, Architectural and Survey Services	7,393	6,148	1,245	20.3%
17	821	Elementary & Secondary Schools	6,763	7,976	- 1,213	- 15.2%
18	893	Accounting, Auditing and Bookkeeping Services	6,506	6,051	455	7.5%
19	737	Computer & Data Processing Services	6,254	4,998	1,260	25.2%
20	721	Laundry, Cleaning & Garment Serv.	6,253	6,235	18	0.3%
21	836	Residential Care	6,054	5,354	700	13.1%
22	793	Bowling & Billiard Establishments	5,68	6,271	- 584	- 9.3%

(continued)

TABLE 7, Continued

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
23	833	Job Training and Vocational Rehabilitation Centers	5,412	5,011	401	8.8%
24	863	Labor Organizations	5,026	5,123	- 97	- 1.9%
25	804	Offices of Other Health Practitioners	4,421	3,340	1,081	32.4%
26	835	Child Day Care Service	3,798	2,860	938	32.8%
27	809	Health & Allied Services NEC	3,638	1,551	2,087	134.6%
28	731	Advertising	3,445	2,945	500	17.0%
29	832	Individual & Family Social Services	3,281	2,657	624	23.5%
30	729	Miscellaneous Personal Services	3,174	2,330	844	36.2%
31	733	Mailing, Reproductions, Steno.	2,453	1,590	863	54.3%
32	769	Miscellaneous Repair Shops	2,267	2,458	- 191	- 7.8%
33	783	Motion Picture Theaters	2,040	2,192	- 152	- 6.9%
34	807	Medical & Dental Labs.	1,816	1,594	222	13.9%
35	88	Private Households	1,796	1,532	264	17.2%
36	808	Outpatient Care Facilities	1,789	1,189	600	50.5%
37	754	Automotive Services Except Repair	1,734	1,249	485	30.8%
38	751	Automotive Rental and Leasing Without Drivers	1,712	1,554	158	10.2%
39	861	Business Associations	1,538	1,446	92	6.4%
40	726	Funeral Services & Crematories	1,370	1,324	46	3.5%
41	792	Producers, Orchestra & Entertainers	1,353	833	520	62.4%
42	732	Credit Reporting & Collection	1,226	931	295	31.7%
43	762	Electric Repair Shops	1,254	1,194	60	5.0%
44	869	Membership Organizations NEC	1,015	1,234	264	- 17.2%
45	722	Photographic Studios, Portrait	996	801	195	24.3%
46	892	Noncommercial, Education, Scientific Research Organizations	946	959	- 13	- 1.4%
47	794	Commercial Sports	904	876	28	3.2%
48	703	Camps and Trailer Parks	902	746	156	20.9%
49	829	Schools & Education Services NEC	770	691	79	11.4%
50	724	Barber Shop	612	765	- 153	20.0%
51	862	Professional Membership Organizations	528	479	49	9.3%
52	841	Museums & Art Galleries	409	315	94	29.8%
53	824	Correspondence & Vocational Schools	371	333	38	11.4%
54	752	Automobile Parking	370	397	- 27	- 6.8%
55	764	Reupholstery & Furniture Repair	313	277	36	13.0%
56	866	Religious Organizations	294	294	0	0
57	791	Dance Halls, Studios and Schools	277	265	12	4.5%
58	803	Offices of Osteopathic Physicians	241	239	2	0.8%
59	781	Motion Picture Production & Service	202	238	- 36	- 13.1%
60	704	Organizations, Hotels and Lodging Houses On Membership Basis	145	163	-18	- 11.0%
61	702	Rooming and Boarding Houses	93	94	-1	- 1.1%
62	763	Watch, Clock and Jewelry Repair	84	64	20	31.3%
63	725	Shoe Repair and Hat Cleaning Shops	82	77	5	6.5%
64	865	Political Organizations	38	90	- 52	- 57.8%
65	735	News Syndicates	32	30	2	6.3%
66	782	Motion Picture Distributions & Serv.	25	28	-3	- 10.7%
67	823	Libraries & Information Services	20	15	5	33.3%
68	842	Botanical & Zoological Gardens	5	6	- 1	- 20.0%

SOURCE: WIS DILHR, CES data.

TABLE 8
SERVICE AND MISCELLANEOUS INDUSTRY GROUP JOB GROWTH

Ranked by Number of Additional Jobs

(One Hundred or More Additional Jobs)

RANK	CODE	INDUSTRY NAME	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	736	Personnel Supply Services	16,639	7,844	8,795	112.1%
2	739	Miscellaneous Business Services	23,198	18,505	4,693	25.4%
3	801	Offices of Physicians	23,665	20,947	2,718	13.0%
4	805	Nursing & Personal Care Facilities	36,897	34,293	2,604	7.6%
5	734	Services to Dwellings and Other Buildings	10,585	8,188	2,395	29.3%
6	809	Health & Allied Services NEC	3,638	1,551	2,087	134.6%
7	723	Beauty Shops	10,751	8,717	2,034	23.3%
8	753	Auto Repair Shops	7,730	6,136	1,594	26.0%
9	81	Legal Services	10,907	9,639	1,268	13.2%
10	737	Computer & Data Processing Serv.	6,254	4,998	1,260	25.2%
11	891	Engineering, Architectural and Survey Services	7,393	6,148	1,245	20.3%
12	804	Offices of Other Health Practitioners	4,421	3,340	1,081	32.4%
13	802	Offices of Dentists	11,141	10,076	1,065	10.6%
14	835	Child Day Care Service	3,798	2,860	938	32.8%
15	864	Civic, Social, & Fraternal Assoc.	8,007	7,078	920	13.1%
16	733	Mailing, Reproductions, Steno.	2,453	1,590	863	54.3%
17	729	Miscellaneous Personal Services	3,174	2,330	844	36.2%
18	836	Residential Care	6,054	5,354	700	13.1%
19	832	Individual & Family Social Services	3,281	2,657	624	23.5%
20	808	Outpatient Care Facilities	1,789	1,189	600	50.5%
21	799	Misc. Amusement, Recreation Serv.	10,232	9,641	591	6.1%
22	701	Hotels, Motels & Tourist Courts	19,745	19,182	563	2.9%
23	792	Producers, Orchestra and Entertainers	1,353	833	520	62.4%
24	731	Advertising	3,445	2,945	500	17.0%
25	754	Automotive Serv. Exc. Repair	1,734	1,249	485	30.8%
26	893	Accounting, Auditing and Bookkeeping Services	6,506	6,051	455	7.4%
27	833	Vocational Rehabilitation Centers	5,412	5,011	401	8.8%
28	732	Credit Reporting and Collection	1,226	931	295	31.7%
29	88	Private Households	1,789	1,189	600	50.5%
30	869	Membership Organizations, NEC	1,015	1,234	264	17.2%
31	807	Medical and Dental Labs	1,816	1,594	222	13.9%
32	722	Photographic Studios (Portrait)	996	801	195	24.3%
33	751	Automotive Rental and Leasing Without Drivers	1,712	1,554	158	10.2%
34	703	Camps and Trailer Parks	902	746	156	20.9%

SOURCE: WIS DILHR, CES data.

TABLE 9
SERVICE AND MISCELLANEOUS INDUSTRY GROUP JOB LOSS

Ranked by Number of Jobs Lost

RANK	CODE	INDUSTRY NAME	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	806	Hospitals	66,764	75,265	- 8,501	- 11.3%
2	821	Elementary and Secondary Schools	6,763	7,976	- 1,213	- 15.2%
3	822	Colleges and Universities	10,682	11,282	- 600	- 5.3%
4	793	Bowling & Billiard Establishments	5,687	6,271	- 584	- 9.3%
5	769	Miscellaneous Repair Shops	2,267	2,458	- 191	- 7.8%
6	724	Barber Shops	612	765	- 153	20.0%
7	783	Motion Picture Theaters	2,040	2,192	- 152	- 6.9%
8	863	Labor Organizations	5,026	5,123	- 97	- 1.9%
9	839	Social Services NEC	8,266	8,316	- 50	- 0.6%
10	865	Political Organizations	38	90	- 52	- 57.8%
11	781	Motion Picture Production & Service	202	238	- 36	- 13.1%
12	752	Automobile Parking	370	397	- 27	- 6.8%
13	704	Organizations, Hotels and Lodging Houses On Membership Basis	145	163	- 18	- 11.0%
14	892	Noncommercial, Education, and Scientific Research Organizations	946	959	- 13	- 1.4%
15	782	Motion Picture Distributors and Services	25	28	- 3	- 10.7%
16	702	Rooming and Boarding Houses	93	94	- 1	- 1.1%
17	842	Botanical & Zoological Gardens	5	6	- 1	- 20.0%

SOURCE: WIS DILHR, CES data.

TABLE 10
SERVICE AND MISCELLANEOUS INDUSTRY GROUP JOB GROWTH

Ranked by Percentage of Additional Jobs

(Growth of Ten Percent or More)

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	809	Health & Allied Services NEC	3,638	1,551	2,087	134.6%
2	736	Personnel Supply Services	16,639	7,844	8,795	112.1%
3	792	Producers, Orchestra & Entertainers	1,353	833	520	62.4%
4	733	Mailing, Reproductions, and Stenographic	2,453	1,590	863	54.3%
5	808	Outpatient Care Facilities	1,789	1,189	600	50.5%
6	729	Miscellaneous Personal Services	3,174	2,330	844	36.2%
7	823	Libraries & Information Services	20	15	5	33.3%
8	835	Child Day Care Service	3,798	2,860	938	32.8%
9	804	Offices of Other Health Practitioners	4,421	3,340	1,081	32.4%
10	763	Watch, Clock and Jewelry Repair	84	64	20	31.3%
11	754	Automotive Services Except Repair	1,734	1,249	485	30.8%
12	841	Museums and Art Galleries	409	315	94	29.8%
13	734	Services to Dwellings & Other Bldg.	10,585	8,188	2,395	29.3%
14	753	Auto Repair Shops	7,730	6,136	1,594	26.0%
15	739	Miscellaneous Business Services	23,198	18,505	4,693	25.4%
16	737	Computer & Data Processing Services	6,254	4,998	1,260	25.2%
17	722	Photographic Studios (Portrait)	996	801	195	24.3%
18	832	Individual & Family Social Services	3,281	2,657	624	23.5%
19	723	Beauty Shops	10,751	8,717	2,034	23.3%
20	703	Camps and Trailer Parks	902	746	156	20.9%
21	891	Engineering, Architectural and Survey Services	7,393	6,148	1,245	20.3%
22	88	Private Households	1,796	1,532	264	17.2%
23	731	Advertising	3,445	2,945	500	17.0%
24	807	Medical and Dental Labs	1,816	1,594	222	13.9%
25	81	Legal Services	10,907	9,639	1,268	13.2%
26	864	Civic, Social & Fraternal Assoc.	8,007	7,078	920	13.1%
27	801	Offices of Physicians	23,665	20,947	2,718	13.0%
28	764	Reupholstery & Furniture Repair	313	277	36	13.0%
29	824	Correspondence and Vocational Schools	371	333	38	11.4%
30	829	Schools & Education Serv., NEC	770	691	79	11.4%
31	802	Offices of Dentists	11,141	10,076	1,065	10.6%
32	751	Automotive Rental and Leasing Without Drivers	1,712	1,554	158	10.2%

SOURCE: WIS DILHR, CES data.

TABLE 11
SERVICE AND MISCELLANEOUS INDUSTRY GROUP JOB LOSS

Ranked by Percentage of Jobs Lost

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS LOST	PERCENTAGE LOST
1	865	Political Organizations	38	90	- 52	- 57.8%
2	724	Barber Shops	612	765	- 153	- 20.0%
3	842	Botanical and Zoological Gardens	5	6	- 1	- 20.0%
4	821	Elementary and Secondary Schools	6,763	7,976	- 1,213	- 15.2%
5	781	Motion Picture Production and Service	202	238	- 36	- 13.1%
6	806	Hospitals	66,764	75,265	- 8,501	- 11.3%
7	704	Organizations, Hotels and Lodging Houses On Membership Basis	145	163	- 18	- 11.0%
8	782	Motion Picture Distribution and Services	25	28	- 3	- 10.7%
9	793	Bowling & Billiard Establishments	5,687	6,271	- 584	- 9.3%
10	769	Miscellaneous Repair Shops	2,267	2,458	- 191	- 7.8%
11	783	Motion Picture Theaters	2,040	2,192	- 152	- 6.9%
12	752	Automobile Parking	370	397	- 27	- 6.8%
13	822	Colleges and Universities	10,682	11,282	- 600	- 5.3%
14	863	Labor Organizations	5,026	5,123	- 97	- 1.9%
15	892	Noncommercial, Education, and Scientific Research Organizations	946	959	- 13	- 1.4%
16	702	Rooming and Boarding Houses	93	94	- 1	- 1.1%
17	839	Social Services NEC	8,266	8,316	- 50	- 0.6%

SOURCE: WIS DILHR, CES data.

3. Finance, Insurance and Real Estate Industries

On a percentage basis, the finance, insurance and real estate group has produced the second most rapid job increase. From 1982 through the April, 1987, period, this group has increased by 15.4%. In the last two years and four months, it has had the most rapid percentage increase of any major groups at 7.6%. Commercial banks provide the largest number of jobs in this group, 26,353, followed by fire, marine and casualty insurance firms with 15,171 jobs.

The greatest number of additional jobs between 1982 and 1985 developed in insurance agents, brokers and service firms and commercial and stock savings banks. Each added 1,300 jobs. A small group, establishments performing functions closely related to banking, had the highest percentage increase in jobs, 105.7%. This increase provided only 37 additional jobs, however. Mortgage bankers and brokers grew by 81.6% and provided 585 additional jobs. Trusts lost the greatest number of jobs, 598, and had the highest percentage of jobs lost, -76.9%.

TABLE 12
FINANCE, INSURANCE AND REAL ESTATE INDUSTRY GROUP

Industries Ranked by Job Level

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	602	Commercial and Stock Savings Banks	27,683	26,353	1,330	5.0%
2	633	Fire, Marine & Casualty Insurance	14,618	15,171	- 553	- 3.6%
3	631	Life Insurance	9,390	8,996	394	4.4%
4	64	Insurance Agents, Brokers & Serv.	8,874	7,544	1,330	17.6%
5	612	Savings and Loan Associations	6,906	5,656	1,250	22.1%
6	632	Accident & Health Insurance & Medical Service Plans	6,298	5,527	771	13.9%
7	651	Real Estate Operators and Services	6,014	6,553	- 539	- 8.2%
8	614	Personal Credit Institutions	4,870	4,369	501	11.5%
9	653	Real Estate Agents and Managers	4,431	4,352	79	1.8%
10	621	Securities Brokers and Dealers	3,181	2,554	627	24.5%
11	616	Mortgage Bankers and Brokers	1,300	716	584	81.6%
12	671	Holding Offices	1,129	996	133	13.3%
13	655	Subdividers and Developers	1,044	1,054	- 10	- 0.9%
14	635	Surety Insurance	1,021	1,061	- 40	- 3.8%
15	613	Agricultural Credit Institutions	738	749	- 11	- 1.5%
16	654	Title Abstract Offices	706	526	180	34.2%
17	636	Title Insurance	700	601	99	16.5%
18	615	Business Credit Institutions	455	332	123	37.0%
19	628	Securities, Commodity Services	426	362	64	17.7%
20	637	Pension, Health & Welfare Funds	291	181	110	60.8%
21	679	Miscellaneous Investing	290	228	62	27.2%
22	66	Combinations of Real Estate, Insurance, Loan, Law Offices	202	333	- 131	- 39.3%
23	673	Trusts	180	778	- 598	- 76.9%
24	601	Federal Reserve Banks	106	141	- 35	- 24.8%
25	603	Mutual Savings Banks	75	56	19	33.9%
26	605	Establishments Performing Functions Closely Related to Banking	72	35	37	105.7%
27	604	Trust Companies Not Engaged in Deposit Banking	34	40	- 6	- 15.0%
28	672	Investment Offices	20	16	4	25.0%
29	622	Commodity Contracts, Dealers and Brokers	10	20	- 10	- 50.0%
30	639	Insurance Carriers NEC	6	6	0	0.0%
31	623	Security, Commodity Exchanges	3	3	0	0.0%

SOURCE: WIS DILHR, CES data.

TABLE 13
FINANCE, INSURANCE AND REAL ESTATE INDUSTRY GROUP JOB GROWTH

Ranked by Number of Additional Jobs

(One Hundred or More Additional Jobs)

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	64	Insurance Agents, Brokers & Serv.	8,874	7,544	1,330	17.6%
2	602	Commercial and Stock Savings Bank	27,683	26,353	1,330	5.0%
3	612	Savings and Loan Associations	6,906	5,656	1,250	22.1%
4	632	Accident & Health Insurance & Medical Service Plans	6,298	5,527	771	13.9%
5	621	Securities Brokers and Dealers	3,181	2,554	627	24.5%
6	616	Mortgage Bankers and Brokers	1,300	716	584	81.6%
7	631	Life Insurance	9,390	8,996	394	4.4%
8	654	Title Abstract Office	706	526	180	34.2%
9	671	Holding Offices	1,129	996	133	13.3%
10	615	Business Credit Institutions	455	332	123	37.0%
11	637	Pension, Health & Welfare Funds	291	181	110	60.8%

SOURCE: WIS DILHR, CES data.

TABLE 14
FINANCE, INSURANCE AND REAL ESTATE INDUSTRY GROUP JOB LOSS

Ranked by Number of Jobs Lost

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS LOST	PERCENTAGE LOST
1	673	Trusts	180	778	- 598	- 76.9%
2	633	Fire, Marine & Casualty Insurance	14,618	15,171	- 553	- 3.6%
3	651	Real Estate Operators and Services	6,014	6,553	- 539	- 8.2%
4	66	Combinations of Real Estate, Insurance, Loan, Law Offices	202	333	- 131	- 39.3%
5	635	Surety Insurance	1,021	1,061	- 40	- 3.8%
6	601	Federal Reserve Banks	106	141	- 35	- 24.8%
7	613	Agricultural Credit Institutions	738	749	- 11	- 1.5%
8	655	Subdividers and Developers	1,044	1,054	- 10	- 0.9%
9	622	Commodity Contracts, Dealers and Brokers	10	20	- 10	- 50.0%
10	604	Trust Companies Not Engaged in Deposit Banking	34	40	- 6	- 15.0%

SOURCE: WIS DILHR, CES data.

TABLE 15
FINANCE, INSURANCE AND REAL ESTATE INDUSTRY GROUP JOB GROWTH

Ranked by Percentage of Job Growth

(Growth of Ten Percent or More)

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	605	Establishments Performing Functions Closely Related to Banking	72	35	37	105.7%
2	616	Mortgage Bankers and Brokers	1,300	716	584	81.6%
3	637	Pension, Health & Welfare Funds	291	181	110	60.8%
4	615	Business Credit Institutions	455	332	123	37.0%
5	636	Title Insurance	700	601	99	16.5%
6	603	Mutual Savings Bank	75	56	19	33.9%
7	679	Miscellaneous Investing	290	228	62	27.2%
8	654	Title Abstract Office	706	526	180	34.2%
9	672	Investment Offices	20	16	4	25.0%
10	621	Securities Brokers and Dealers	3,181	2,554	627	24.5%
11	612	Savings and Loan Associations	6,906	5,656	1,250	22.1%
12	628	Securities, Commodity Services	426	362	64	17.7%
13	64	Insurance Agents, Brokers & Serv.	8,874	7,544	1,330	17.6%
14	632	Accident & Health Insurance & Medical Service Plans	6,298	5,527	771	13.9%
15	671	Holding Offices	1,129	996	133	13.3%
16	614	Personal Credit Institutions	4,870	4,369	501	11.5%

SOURCE: WIS DILHR, CES data.

TABLE 16
FINANCE, INSURANCE AND REAL ESTATE INDUSTRY GROUP JOB LOSS

Ranked by Percentage of Jobs Lost

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS LOST	PERCENTAGE LOST
1	673	Trusts	180	778	- 598	- 76.9%
2	622	Commodity Contracts, Dealers and Brokers	10	20	- 10	- 50.0%
3	66	Combinations of Real Estate, Insurance, Loan, Law Offices	202	333	- 131	- 39.3%
4	601	Federal Reserve Banks	106	141	- 35	- 24.8%
5	604	Trust Companies Not Engaged in Deposit Banking	34	40	- 6	- 15.0%
6	651	Real Estate Operators and Services	6,014	6,553	- 539	- 8.2%
7	635	Surety Insurance	1,021	1,061	- 40	- 3.8%
8	633	Fire, Marine & Casualty Insurance	14,618	15,171	- 553	- 3.6%
9	613	Agricultural Credit Institutions	738	749	- 11	- 1.5%

SOURCE: WIS DILHR, CES data.

4. Transportation, Communication and Public Utility Industries

This group of industries grew at the slowest pace of any of the service groups and, in the last sixteen months, it has actually declined slightly. It is the only service sector group to decline in that period. However, it also had the fastest growing detailed industry in the 1982-1985 period. Local and long-distance trucking provided the largest number of jobs in 1985 when the industry job total was 31,161. This industry also added the most jobs in the 1982-1985 period, adding 5,605 jobs.

In 1982 the passenger transportation charter service was a very small industry comprised of only 37 jobs. Between 1982 and 1985 the industry grew at the phenomenal rate of 1,191.9% to 478 employees. In Wisconsin the industry is primarily made up of charter bus services and transportation services for disabled people.

The telephone communication industry group sustained the largest job loss, losing 1,400 jobs. The loss is a result of the court-ordered breakup of the dominant firm in the industry and the continuing application of new technology to the industry's activities.

Several very small industries sustained the largest job losses between 1982 and 1985. Deep sea foreign transportation lost its only two jobs, and jobs in the rental of railroad cars industry declined from 21 to 3, a decline of 85.7% in this period.

TABLE 17
TRANSPORTATION, COMMUNICATION AND PUBLIC UTILITIES INDUSTRY GROUP

Industries Ranked by Job Level

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	421	Trucking, Local and Long Distance	31,161	25,556	5,605	21.9%
2	481	Telephone Communications	18,970	20,370	-1,400	- 6.9%
3	491	Electric Services	7,311	7,314	- 3	*
4	415	School Bus Transportation	6,526	6,302	224	3.6%
5	493	Combination Utility Services	6,363	5,978	305	6.4%
6	483	Radio and Television Broadcasting	4,373	4,101	272	6.6%
7	411	Local and Suburban Passenger Transportation	3,037	2,913	124	4.3%
8	492	Gas Production and Distribution	2,852	2,938	- 86	- 2.9%
9	472	Arrangement of Transportation	2,729	1,908	821	43.0%
10	422	Public Warehousing	2,126	1,652	475	28.7%
11	489	Communication Service NEC	1,737	1,466	271	18.5%
12	451	Certificated Air Transportation	1,616	917	699	76.2%
13	458	Air Transportation Services	651	649	2	0.3%
14	495	Sanitary Services	648	698	- 50	- 7.7%
15	446	Services Incidental to Water Transportation	628	651	- 23	- 3.5%
16	412	Taxicabs	579	735	- 156	- 21.2%
17	414	Passenger Transportation Charter Services	478	37	441	1,191.9%
18	471	Freight Forwarding	383	360	23	6.4%
19	413	Intercity, City and Rural Highway Passenger Transportation	350	479	- 129	- 26.9%
20	445	Local Water Transportation	342	499	- 157	- 31.5%
21	452	Noncertificated Air Transportation	281	555	- 274	- 49.4%
22	478	Misc. Transportation Services	185	169	16	9.5%
23	46	Pipelines, except Natural Gas	163	153	10	6.5%
24	423	Trucking, Terminal Facilities	62	87	- 25	- 28.7%
25	482	Telegraph Communications	40	66	- 26	- 39.4%
26	494	Water Supply	19	20	- 1	- 5.0%
27	443	Great Lakes Transportation, Transportation on Rivers and Canals	18	19	- 1	- 5.0%
28	474	Rental of Railroad Cars	3	21	- 18	- 85.7%
29	441	Deep Sea Foreign Transportation	0	2	- 2	- 100.0%
30	496	Steam Supply	0	0	0	0.0%

*Less than -0.05 percent.

SOURCE: WIS DILHR, CES data.

TABLE 18
TRANSPORTATION, COMMUNICATION AND PUBLIC UTILITIES INDUSTRY GROUP

Ranked by Number of Additional Jobs

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	421	Trucking, Local and Long Distance	31,161	25,556	5,605	21.9%
2	472	Arrangement of Transportation	2,729	1,908	821	43.0%
3	451	Certificated Air Transportation	1,616	917	699	76.2%
4	422	Public Warehousing	2,126	1,652	475	28.7%
5	414	Passenger Transportation Charter Services	478	37	441	1,191.9%
6	493	Combination Utility Services	6,363	5,978	305	6.4%
7	483	Radio and Television Broadcasting	4,373	4,101	272	6.6%
8	489	Communication Service NEC	1,737	1,466	271	18.5%
9	415	School Busses	6,526	6,302	224	3.6%
10	411	Local and Suburban Passenger Transportation	3,037	2,913	124	4.3%
11	471	Freight Forwarding	383	360	23	6.4%
12	478	Misc. Transportation Services	185	169	16	9.5%
13	46	Pipelines, except Natural Gas	163	153	10	6.5%
14	458	Air Transportation Services	651	649	2	0.3%

SOURCE: WIS DILHR, CES data.

TABLE 19
TRANSPORTATION, COMMUNICATION AND PUBLIC UTILITIES INDUSTRY GROUP

Ranked by Number of Jobs Lost

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS LOST	PERCENTAGE LOST
1	481	Telephone Communications	18,970	20,370	-1,400	- 6.9%
2	452	Noncertificated Air Transportation	281	555	- 274	- 49.4%
3	445	Local Water Transportation	342	499	- 157	- 31.5%
4	412	Taxicabs	579	735	- 156	- 21.2%
5	413	Intercity, City and Rural Highway Passenger Transportation	350	479	- 129	- 26.9%
6	492	Gas Production and Distribution	2,852	2,938	- 86	- 2.9%
7	495	Sanitary Services	648	698	- 50	- 7.7%
8	482	Telegraph Communications	40	66	- 26	- 39.4%
9	423	Trucking, Terminal Facilities	62	87	- 25	- 28.7%
10	446	Services Incidental to Water Transportation	628	651	- 23	- 3.5%
11	474	Rental of Railroad Cars	3	21	- 18	- 85.7%
12	491	Electric Services	7,311	7,314	- 3	*
13	441	Deep Sea Foreign Transportation	0	2	- 2	- 100.0%
14	443	Great Lakes Transportation, Transportation on Rivers and Canals	18	19	- 1	- 5.0%
15	494	Water Supply	19	20	- 1	- 5.0%

SOURCE: WIS DILHR, CES data.

TABLE 20
TRANSPORTATION, COMMUNICATION AND PUBLIC UTILITIES INDUSTRY GROUP

Ranked by Percentage of Jobs Gained

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	414	Passenger Transportation Charter Services	478	37	441	1,191.9%
2	451	Certificated Air Transportation	1,616	917	699	76.2%
3	472	Arrangement of Transportation	2,729	1,908	821	43.0%
4	422	Public Warehousing	2,126	1,652	475	28.7%
5	421	Trucking, Local and Long Distance	31,161	25,556	5,605	21.9%
6	489	Communication Service NEC	1,737	1,466	271	18.5%
7	478	Misc. Transportation Services	185	169	16	9.5%
8	483	Radio and Television Broadcasting	4,373	4,101	272	6.6%
9	46	Pipelines, except Natural Gas	163	153	10	6.5%
10	493	Combination Utility Services	6,363	5,978	305	6.4%
11	471	Freight Forwarding	383	360	23	6.4%
12	411	Local and Suburban Passenger Transportation	3,037	2,913	124	4.3%
13	415	School Bus Transportation	6,526	6,302	224	3.6%
14	458	Air Transportation Services	651	649	2	0.3%

SOURCE: WIS DILHR, CES data

TABLE 21
TRANSPORTATION, COMMUNICATION AND PUBLIC UTILITIES INDUSTRY GROUP

Ranked by Percentage of Jobs Lost

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS LOST	PERCENTAGE LOST
1	441	Deep Sea Foreign Transportations	0	2	- 2	- 100.0%
2	474	Rental of Railroad Cars	3	21	- 18	- 85.7%
3	452	Noncertificated Air Transportation	281	555	- 274	- 49.4%
4	482	Telegraph Communications	40	66	- 26	- 39.4%
5	445	Local Water Transportation	342	499	- 157	- 31.5%
6	423	Trucking, Terminal Facilities	62	87	- 25	- 28.7%
7	413	Intercity, City and Rural Highway Passenger Transportation	350	479	- 129	- 26.9%
8	412	Taxicabs	579	735	- 156	- 21.2%
9	495	Sanitary Services	648	698	- 50	- 7.7%
10	481	Telephone Communications	18,970	20,370	-1,400	- 6.9%
11	494	Water Supply	19	20	- 1	- 5.0%
12	443	Great Lakes Transportation, Transportation on Rivers and Canals	18	19	- 1	- 5.0%
13	446	Services Incidental to Water Transportation	628	651	- 23	- 3.5%
14	492	Gas Production and Distribution	2,852	2,938	- 86	- 2.9%

SOURCE: WIS DILHR CES data

5. Wholesale Trade Industry

During the three-year period from 1982 through 1985, the wholesale trade industry grew slowly, adding 3,145 jobs for a 3.3% rate of growth.

Of the industry's 99,780 jobs, over one-fourth, 26,303, were in the machinery equipment and supplies sales industry. This industry lost 340 or 1.3% of its jobs over the three years. The wholesale groceries and related products sales industry provided the largest number of additional jobs, 1,453.

Jobs in lumber and construction products sales grew at the fastest pace, 27.0%, over the three years. Petroleum and petroleum products sales lost the most jobs, 461, and at 12.4% had the largest percentage decline.

TABLE 22
WHOLESALE TRADE INDUSTRY GROUP

Industries Ranked by Job Level

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	508	Machinery Equipment and Supplies	26,303	26,643	- 340	- 1.3%
2	514	Groceries and Related Products	17,149	15,696	1,453	9.3%
3	519	Miscellaneous Nondurable Goods	11,129	11,158	- 29	- 0.3%
4	501	Motor Vehicles and Automotive Parts and Supplies	8,584	8,029	555	6.9%
5	506	Electrical Goods	5,676	5,403	273	5.1%
6	507	Hardware, Plumbing and Heating Equipment	4,301	4,021	280	7.0%
7	518	Beer, Wine & Distilled Beverages	3,876	3,628	248	6.8%
8	509	Miscellaneous Durable Goods	3,312	2,800	512	18.3%
9	517	Petroleum & Petroleum Products	3,263	3,724	- 461	-12.4%
10	503	Lumber and Construction Materials	2,878	2,266	612	27.0%
11	511	Paper and Paper Products	2,844	2,724	120	4.4%
12	516	Chemicals and Allied Products	2,181	2,116	65	3.1%
13	505	Metals and Minerals	1,727	1,873	- 146	- 7.8%
14	512	Drugs and Sundries	1,614	1,530	84	5.5%
15	504	Sporting Goods, Toys & Hobby Goods	1,568	1,737	- 169	- 8.7%
16	515	Farm-Product Raw Materials	1,479	1,665	- 187	-11.2%
17	502	Furniture and Home Furnishings	1,144	1,028	116	11.3%
18	513	Apparel, Piece Goods and Notions	754	594	160	26.9%

SOURCE: WIS DILHR, CES data.

TABLE 23
WHOLESALE TRADE INDUSTRY GROUP

Ranked by Number of Additional Jobs

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	514	Groceries and Related Products	17,149	15,696	1,453	9.3%
2	503	Lumber and Construction Materials	2,878	2,266	612	27.0%
3	501	Motor Vehicles and Automotive Parts and Supplies	8,584	8,029	555	6.9%
4	509	Miscellaneous Durable Goods	3,312	2,800	512	18.3%
5	507	Hardware, Plumbing and Heating Equipment	4,301	4,021	280	7.0%
6	506	Electrical Goods	5,676	5,403	273	5.1%
7	518	Beer, Wine & Distilled Beverages	3,876	3,628	248	6.8%
8	513	Apparel, Piece Goods and Notions	754	594	160	26.9%
9	511	Paper and Paper Products	2,844	2,724	120	4.4%
10	502	Furniture and Home Furnishings	1,144	1,028	116	11.3%
11	512	Drugs and Sundries	1,614	1,530	84	5.5%
12	516	Chemicals and Allied Products	2,181	2,116	65	3.1%

SOURCE: WIS DILHR, CES data.

TABLE 24
WHOLESALE TRADE INDUSTRY GROUP

Ranked By Number of Jobs Lost

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS LOST	PERCENTAGE LOST
1	517	Petroleum & Petroleum Products	3,263	3,724	- 461	-12.4%
2	508	Machinery Equipment and Supplies	26,303	26,643	- 340	- 1.3%
3	515	Farm-Product Raw Materials	1,479	1,665	- 187	-11.2%
4	504	Sporting Goods, Toys & Hobby Goods	1,568	1,737	- 169	- 8.7%
5	505	Metals and Minerals	1,727	1,873	- 146	- 7.8%
6	519	Miscellaneous Nondurable Goods	11,129	11,158	- 29	- 0.3%

SOURCE: WIS DILHR, CES data

TABLE 25
WHOLESALE TRADE INDUSTRY GROUP

Ranked by Percentage of Jobs Gained

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS GAINED	PERCENTAGE GAIN
1	503	Lumber and Construction Materials	2,878	2,266	612	27.0%
2	513	Apparel, Piece Goods and Notions	754	594	160	26.9%
3	509	Miscellaneous Durable Goods	3,312	2,800	512	18.3%
4	502	Furniture and Home Furnishings	1,144	1,028	116	11.3%
5	514	Groceries and Related Products	17,149	15,696	1,453	9.3%
6	507	Hardware, Plumbing and Heating Equipment	4,301	4,021	280	7.0%
7	501	Motor Vehicles and Automotive Parts and Supplies	8,584	8,029	555	6.9%
8	518	Beer, Wine & Distilled Beverages	3,876	3,628	248	6.8%
9	512	Drugs and Sundries	1,614	1,530	84	5.5%
10	506	Electrical Goods	5,676	5,403	273	5.1%
11	511	Paper and Paper Products	2,844	2,724	120	4.4%
12	516	Chemicals and Allied Products	2,181	2,116	65	3.1%

SOURCE: WIS DILHR, CES data.

TABLE 26
WHOLESALE TRADE INDUSTRY GROUP

Ranked by Percentage of Jobs Lost

RANK	CODE	DETAILED INDUSTRY TITLE	1985 JOB LEVEL	1982 JOB LEVEL	NUMBER OF JOBS LOST	PERCENTAGE LOST
1	517	Petroleum and Petroleum Products	3,263	3,724	- 461	-12.4%
2	515	Farm-Product Raw Materials	1,479	1,665	- 187	-11.2%
3	504	Sporting Goods, Toys & Hobby Goods	1,568	1,737	- 169	- 8.7%
4	505	Metals and Minerals	1,727	1,873	- 146	- 7.8%
5	508	Machinery Equipment and Supplies	26,303	26,643	- 340	- 1.3%
6	519	Miscellaneous Nondurable Goods	11,129	11,158	- 29	- 0.3%

SOURCE: WIS DILHR, CES data.

6. Service Sector Job Growth

The economy's movement towards service sector jobs and away from goods-production jobs continues. By now this shift is an old story, but the debate continues about the "post industrial society." Will it mean a lower standard of living for the U.S.? For Wisconsin? Some individuals deny a shift from higher-wage jobs to lower-wage jobs is occurring, while others condemn the shift.

In the past, the Department of Industry, Labor and Human Relations (DILHR) has simply reported a significant decline in the number of jobs in industries with higher average earnings and a significant increase in the number of jobs in lower average earnings industries. These were wage and salary jobs and excluded self-employed workers.

While a few of the jobs now counted as service jobs did result from contracting out by manufacturing employers, most new service sector jobs do not represent a transfer of work from the goods-production sector. Developing on their own, service jobs generally did not grow at the expense of the goods-producing jobs.

Without the higher average wage jobs we once produced in our state, the surge in service jobs should be welcome, even though the jobs are lower paying on the average. Without the service jobs, the shift would have been to a lower number of jobs, higher unemployment rates and lower total income levels.

The populace is adjusting to the new job growth in the service sector. Total income levels have been maintained if not increased. A higher percentage of our working-age population is in the labor force and employed than ever before. Income that was "lost" by the goods/service job shift was often made up with second jobs and additional family workers. Without the additional service jobs growth this would not have been possible. Thus the availability of service jobs, even with their lower average earnings, is a definite positive development, minimizing much of the income lost by the goods sector job decline.

It is important to note not everyone has been able to adjust to the shift. Pockets of unemployment remain, and barriers to employment remain for many. Without the growth in service jobs, there would have been more who did not adjust to the new service-dominated economy.

How were annual average earnings distributed within the various service sector industry groups? How were job gains and losses distributed within these industry groups? Ranking annual average earnings in detailed industries by dollars earned and jobs gained or lost gives us a better picture of the "quality" of the jobs gained and lost in these industry groups between 1982 and 1985. Details follow.

a. Retail Trade

Between 1982 and 1985 two detailed industry groupings provided 46.9% of the job growth in retail trade. New and used car dealers provided the highest average earnings in 1985, $19,804.35, while eating and drinking places paid the least in average earnings per employee, $5,336.92.

While new and used car dealers, the high earnings industry, provided 3,007 additional jobs in 1985, eating and drinking places, the lowest average earnings industry, added 13,165 jobs (over four times as many). When ranked by average annual earnings, economic industries in the lower half of the ranking provided 69.3% of the additional jobs and industries in the upper half provided 30.7%. The top ten average earnings industries provided 17.5% of the additional jobs while the bottom ten industries provided 41.4% of the jobs. Of the 42 detailed industry subgroups, only two had average earnings above the all-industry average. Only 2,998 additional jobs, or 8.7% of the retail trade additional jobs total were added in detailed industries that paid above the all-industry average.

TABLE 27
RETAIL TRADE INDUSTRY GROUP RANKED BY EARNINGS

RANK	CODE	DETAILED INDUSTRY TITLE	ANNUAL AVERAGE EARNINGS PER EMPLOYEE	JOB GAIN/LOSS
1	551	New and Used Car Dealers	$19,804.35	3,007
2	568	Furriers and Fur Shops	17,724.29	- 9
3	598	Fuel and Ice Dealers	15,551.99	201
4	527	Mobile Home Dealers	15,161.62	- 10
5	523	Paint, Glass and Wallpaper Stores	14,855.18	143
6	553	Auto and Home Supply Stores	14,802.52	580
7	521	Lumber and Other Building Materials Stores	14,742.82	1,798
8	555	Boat Dealers	14,227.82	226
9	559	Automotive Dealers, NEC	13,352.49	11
10	572	Household Appliance Stores	13,283.45	74
11	569	Misc. Apparel and Accessory Stores	13,051.97	111
12	571	Furniture, Home Furnishings and Equipment Stores, Except Appliances	13,050.87	261
13	573	Radio, Television and Music Stores	12,972.12	1,488
14	596	Nonstore Retailers	12,716.12	2,470
15	557	Motorcycle Dealers	12,275.33	29
16	552	Used Car Dealers	12,253.59	162
17	556	Recreation & Utility Trailer Dealers	12,041.24	59
18	526	Retail Nurseries, Lawn & Garden Stores	11,147.77	203
19	539	Misc. General Merchandise Stores	10,569.81	242
20	591	Drug Stores	10,272.05	318
21	561	Men and Boys' Clothing	9,982.46	- 85
22	599	Retail Stores, NEC	9,960.47	1,097
23	593	Used Merchandise Stores	9,807.09	383
24	531	Department Stores	9,586.51	3,572
25	542	Meat and Fish Markets Including Freezer Provisions	9,223.92	- 5
26	566	Shoe Stores	9,180.78	257
27	541	Grocery Stores	9,151.19	1,911
28	525	Hardware Stores	9,113.26	- 373
29	543	Fruit Stores and Vegetable Markets	9,054.78	9
30	533	Variety Stores	9,008.71	- 48
31	554	Gas Service Stations	8,818.90	963
32	594	Miscellaneous Shopping Goods Stores	8,435.86	1,172
33	565	Family Clothing Stores	7,418.13	- 95
34	592	Liquor Stores	6,941.99	234
35	562	Women's Ready-to-Wear Stores	6,732.71	907
36	549	Miscellaneous Food Stores	6,726.00	67
37	545	Dairy Product Stores	6,536.01	- 41
38	546	Retail Bakeries	6,271.75	- 290
39	563	Women's Accessory and Specialty Stores	6,143.46	143
40	564	Children's and Infantswear Stores	5,746.88	13
41	544	Candy, Nut and Confectionary Stores	5,567.96	174
42	58	Eating and Drinking Places	5,336.92	13,165

SOURCE: WIS DILHR, CES data

b. Service And Miscellaneous

When we rank the service group's detailed industries by average earnings in the industry, we found that only 7,935 jobs, or 24.6%, came from the top half of the ranking while 24,352, or 75.4%, of the jobs came from the lower half of the ranking.

One detailed industry grouping, hospitals, had a major influence, as hospitals ranked 23rd out of 68th in average earnings and lost 8,501 jobs from 1982 to 1985. Without this large job loss by hospitals, 50.9% of the job gains would be above the median and 49.1% would be below the median. Industries ranked in the top quarter increased their job total by 8,212 jobs, while those in the bottom quarter added 6,308 jobs. Fifteen of the service group's 68 detailed industry subgroups paid average earnings above the all-industry group in 1985. About one quarter, 24.0%, of the 32,287 added jobs were created in industries where the average wage equaled or bettered the all-industry average.

TABLE 28

SERVICE AND MISCELLANEOUS INDUSTRY GROUP RANKED BY EARNINGS

RANK	CODE	DETAILED INDUSTRY TITLE	ANNUAL AVERAGE EARNINGS PER EMPLOYEE	JOB GAIN/LOSS
1	801	Offices of Physicians	$32,962.61	2,718
2	735	News Syndicates	30,144.63	- 2
3	891	Engineering, Architectural and Survey Services	25,570.32	1,245
4	81	Legal Services	24,383.69	1,268
5	731	Advertising	22,945.12	500
6	803	Offices of Osteopathic Physicians	22,534.49	2
7	737	Computer and Data Processing Services	21,125.28	1,260
8	807	Medical and Dental Labs	21,095.82	222
9	892	Noncommercial, Education, Scientific Research Organizations	20,535.11	- 13
10	893	Accounting, Auditing and Bookkeeping Services	20,136.30	455
11	781	Motion Picture Production & Services	19,816.12	- 36
12	862	Professional Membership Organizations	19,067.77	49
13	782	Motion Picture Distribution and Serv.	19,061.84	- 3
14	861	Business Associations	18,719.23	92
15	726	Funeral Services and Crematories	18,534.52	46
16	769	Miscellaneous Repair Shops	17,821.69	- 191
17	808	Outpatient Care Facilities	17,321.42	600
18	824	Correspondence & Vocational Schools	17,227.95	38
19	751	Automotive Rental and Leasing Without Drivers	16,548.34	158
20	822	Colleges and Universities	16,525.76	- 600
21	762	Electric Repair Shops	16,041.45	60
22	806	Hospitals	15,874.18	- 8,501
23	732	Credit Reporting and Collections	15,688.99	295
24	733	Mailing, Reproduction, Steno.	15,600.01	863
25	802	Offices of Dentists	15,278.01	1,065
26	753	Auto Repair Shops	14,830.34	1,594
27	869	Membership Organizations, NEC	14,694.89	264
28	739	Miscellaneous Business Services	14,348.38	4,693
29	804	Offices of Other Health Practitioners	13,399.22	1,081
30	866	Religious Organizations	13,503.97	0
31	794	Commercial Sports	12,919.01	28
32	839	Social Services, NEC	11,507.91	- 50
33	821	Elementary and Secondary Schools	10,876.03	- 1,213
34	865	Political Organizations	10,666.50	- 52
35	836	Residential Care	10,343.13	700
36	809	Health and Allied Services, NEC	10,032.19	2,087
37	724	Barber Shops	9,994.20	- 153
38	841	Museums and Art Galleries	9,950.10	94
39	721	Laundry, Cleaning and Garment Services	9,869.91	18
40	763	Watch, Clock and Jewelry Repair	9,854.01	20
41	829	Schools and Education Services, NEC	9,584.30	79
42	792	Producers, Orchestra and Entertainers	9,573.02	520
43	764	Reupholstery and Furniture Repair	9,459.91	36
44	805	Nursing and Personal Care Facilities	9,427.88	2,604

(continued)

TABLE 28

SERVICE AND MISCELLANEOUS INDUSTRY GROUP

(continued)

RANK	CODE	DETAILED INDUSTRY TITLE	ANNUAL AVERAGE EARNINGS PER EMPLOYEE	JOB GAIN/LOSS
45	736	Personnel Supply Services	$9,260.66	8,795
46	754	Automotive Services Except Repair	9,036.58	485
47	752	Automobile Parking	8,503.81	- 27
48	722	Photographic Studio (Portrait)	8,177.13	195
49	833	Vocational Rehabilitation Centers	7,873.07	401
50	703	Camps and Trailer Parks	7,817.48	156
51	723	Beauty Shops	7,664.28	2,034
52	704	Organizations, Hotels and Lodging Houses on Membership Basis	7,650.70	- 18
53	823	Libraries and Information Services	7,512.25	5
54	799	Misc. Amusement Recreation Services	7,131.09	591
55	863	Labor Organizations	7,092.30	- 97
56	864	Civic, Social and Fraternal Assoc.	6,886.08	920
57	842	Botanical and Zoological Gardens	6,861.80	- 1
58	729	Miscellaneous Personal Services	6,787.84	844
59	835	Child Day Care Services	6,683.46	938
60	701	Hotels, Motels and Tourist Courts	6,532.99	563
61	88	Private Households	6,359.04	264
62	725	Shoe Repair and Hat Cleaning Shops	6,231.23	5
63	702	Rooming and Boarding Houses	6,134.09	- 1
64	832	Individual and Family Social Services	6,029.92	624
65	793	Bowling and Billiard Establishments	5,919.78	- 584
66	734	Services to Dwellings & Other Buildings	5,562.20	2,395
67	791	Dance Halls, Studios and Schools	5,540.27	12
68	783	Motion Picture Theaters	4,220.04	- 152

SOURCE: WIS DILHR, CES data.

c. Finance, Insurance and Real Estate Industries

Average earnings in several of the detailed industry groupings of the finance, insurance and real estate group ranked at the very highest average earnings levels. Workers in the securities and commodity services grouping had average earnings of $59,399.40 in 1985, while workers in securities brokers and dealers averaged $40,774.25. Most workers in this industry group earn considerably less than the above-mentioned workers.

Job growth in the detailed industries was concentrated in the middle of the earnings ranking. Industries ranking in the top 25.0% added 619 jobs between 1982 and 1985. Industries ranking in the bottom quarter sustained job losses totaling 698 jobs, while the middle 50.0% added 5,843 jobs. Of the 31 detailed industry subgroupings, 15 had average earnings below the overall industry average of $17,593.86.

TABLE 29

FINANCE, INSURANCE AND REAL ESTATE INDUSTRY GROUP, RANKED BY EARNINGS

RANK	CODE	DETAILED INDUSTRY TITLE	ANNUAL AVERAGE EARNINGS PER EMPLOYEE	JOB GAIN/LOSS
1	628	Securities, Commodity Services	$59,399.40	64
2	621	Securities Brokers and Dealers	40,774.25	627
3	671	Holding Offices	35,974.31	133
4	631	Life Insurance	32,343.74	394
5	635	Surety Insurance	29,945.78	-40
6	672	Investment Offices	23,257.00	4
7	622	Commodity Contracts, Dealers and Brokers	23,173.90	-10
8	633	Fire, Marine and Casualty Insurance	22,981.89	-553
9	615	Business Credit Institutions	22,425.25	123
10	613	Agricultural Credit Institutions	22,422.55	-11
11	604	Trust Companies Not Engaged in Deposit Banking	21,376.00	-6
12	636	Title Insurance	19,677.97	99
13	637	Pension, Health and Welfare Funds	19,426.34	110
14	632	Accident and Health Insurance and Medical Service Plans	18,715.31	771
15	616	Mortgage Bankers and Brokers	18,803.47	584
16	64	Insurance Agents, Brokers and Services	17,758.64	1,330
17	679	Miscellaneous Investing	17,726.06	62
18	603	Mutual Savings Banks	17,316.24	19
19	602	Commercial and Stock Savings Banks	16,948.44	1,330
20	601	Federal Reserve Banks	16,389.31	-35
21	612	Savings and Loan Associations	16,151.24	1,250
22	605	Establishments Performing Functions Closely Related to Banking	16,060.63	37
23	654	Title Abstract Offices	15,343.45	180
24	673	Trusts	15,041.95	-598
25	614	Personal Credit Institutions	14,861.33	501
26	653	Real Estate Agents and Managers	14,278.85	79
27	655	Subdividers and Developers	14,121.41	-10
28	66	Combinations of Real Estate, Insurance, Loan, Law Offices	13,403.13	-131
29	651	Real Estate Operators and Services	10,659.13	-539
30	623	Security, Commodity Exchanges	6,975.00	0
31	639	Insurance Carriers, NEC	6,265.17	0

SOURCE: WIS DILHR, CES data.

d. Transportation, Communication and Public Utilities

About two-thirds, (65.5%) of the industries in this group had average earnings above the all-industry average. Over 80.0% of the group's 5,643 additional jobs were generated in above average earnings industries. The industry's average earnings were 25.0% above the all-industry average. This industry can be characterized as one that pays above average earnings and one that generated above average earnings jobs in the 1982 to 1985 period. Unfortunately it is modest in size and has declined in size in 1985 and 1986. In 1987 it began adding jobs again.

e. Wholesale Trade Industry Group

Only 4 of 14 detailed industries in this group had average earnings below the all-industry average. Only 1 of the 4 industries, farm products raw materials, had average earnings much below the overall industry average. The others were near the average. During the recovery period from the recession(s), this small but generally higher paying industry added 3,146 jobs. The industries that paid below average wages lost 165 jobs as all of this industry group's job gains occurred in the industries paying above the all-industry average. Earnings in this industry group averaged $21,498.33, about two and one-half times the earnings average in the retail trade industry group.

Wholesale trade jobs are often grouped together with retail trade jobs and identified as low paying. This has concealed the fact that wholesale trade jobs have average earnings well above the retail and the all-industry averages. Wholesale trade jobs are not "low paying" jobs.

TABLE 30
SERVICE JOBS ADDED 1982/1985 BY ABOVE OR BELOW AVERAGE EARNINGS OF DETAILED INDUSTRY GROUPINGS

INDUSTRY GROUP	ABOVE AVERAGE EARNINGS DETAILED INDUSTRIES		BELOW AVERAGE EARNINGS DETAILED INDUSTRIES		TOTAL DETAILED INDUSTRIES	
	NUMBER	JOBS ADDED	NUMBER	JOBS ADDED	NUMBER	JOBS ADDED
Retail Trade	2	2,998	40	31,496	42	34,494
Service	16	7,612	52	24,675	68	32,287
Finance, Insurance & Real Estate	15	2,289	16	3,475	31	5,764
Trans., Comm., & Public Utilities	19	5,643	10	1,299	29	6,942
Wholesale Trade	14	3,311	4	- 65	18	3,146
Private Service Total	66	21,853	122	60,780	188	82,633
Government	3	11,230	0	0	3	11,230
Service Total	69	33,083	122	60,780	191	93,863

SOURCE: WIS DILHR, CES data

TABLE 31
ANNUAL AVERAGE EARNINGS BY MAJOR INDUSTRY GROUPS

INDUSTRY GROUP	ANNUAL AVERAGE EARNINGS	PERCENT OF ALL INDUSTRIES AVE. EARNINGS
Retail Trade	$ 8,723.49	49.5%
Service	14,042.30	79.8%
Finance, Insurance and Real Estate	18,937.82	107.6%
Trans., Comm., & Public Utilities	22,025.05	125.2%
Wholesale Trade	21,489.33	122.1%
Private Service Total	14,036.47	79.8%
Government	19,227.63	109.3%
All Industry Total*	17,593.86	100.0%

*Includes manufacturing, mining, construction and a few wage and salary workers in agriculture, forestry and fishing.

SOURCE: WIS DILHR, CES data.

CHAPTER VII
WISCONSIN'S ADULT POPULATION NOT IN THE LABOR FORCE

In 1986, Wisconsin had 3,585,000 civilian residents age 16 and older (Source: U.S. Department of Labor, Bureau of Labor Statistics, Current Population Survey, Tables 12 and 13, 1986). Some 1,186,000 persons were not in the labor force making up one-third of the state's civilian population age 16 and older. Compared to civilians in the 1986 labor force, the group of non-participants was nearly one-half as large in number. See Figure 1, next page, for a distribution of Wisconsin's civilian population age 16 and older in 1986.

To be classified as a non-participant, one has to be neither working for wage/salary-type income nor unemployed and looking for work. Simply, one is considered outside of the labor market when he/she is not working for wage/salary income during the survey week or is not working and had not looked for wage/salary income work in the four weeks preceding the survey week. The Current Population Survey (CPS) is a sample household survey taken every month. The annual figures for Wisconsin are made up of the monthly figures, thus estimates of the number of people in the labor force are compiled monthly. These estimates are adjusted to represent the general population.

Figure 2 indicates labor force non-participation by age and gender in 1986. In total, women made up 51% of the civilian population (age 16 and older) in 1986 but made up 66% of all adults not in the labor force. The female non-participants outnumbered male non-participants in all age groups in 1986 and women's rate of non-participation exceeded men's in all age groups above age 19. Rates of non-participation in labor force are measured by the number of people not in the labor force divided by the total civilian population, per each age, sex or racial/ethnic group.

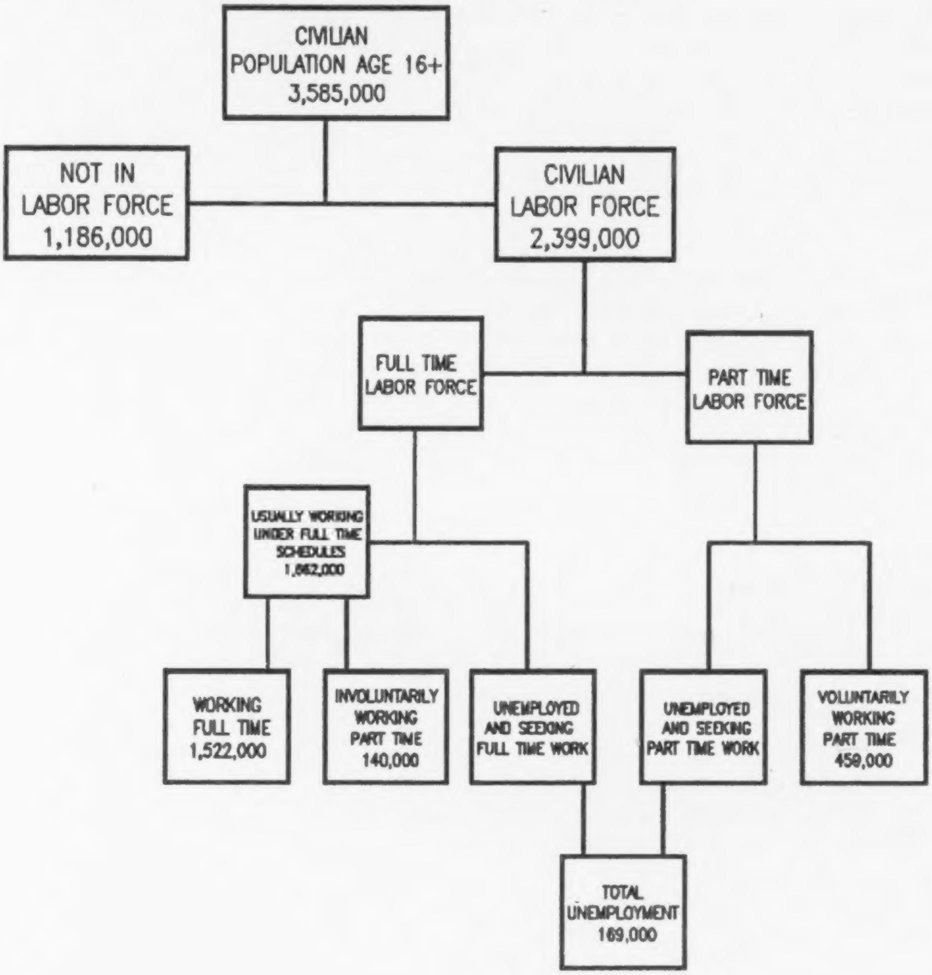
Note in Figure 2 that women's non-participation rates were relatively constant for the prime working age years of 20-54; female non-participation in the labor force ranged from 23% to 30% for these age groups in 1986. Men, however, had relatively low rates of non-participation (4% - 12%) in the 20 to 54 year old age groups. Non-participation in the labor force for both males and females age 16-19 was relatively high in 1986; their non-participation rates were 38% and 34%, respectively.

Historically, the trend of women's decreasing rates of non-participation has been seen through national figures which indicate a steady decline from 79.4% in 1900 to 48.3% in 1980 (Ehrenberg and Smith, p. 150, 1985). Men's rates of non-participation have steadily increased in all age groups in the 20th century; however, males in age groups 14-19 and 65 older have experienced rapid and large increases in labor force non-participation. In 1900, 38.9% of all males 14-19 years old were not in the labor force. By 1980, that rate had risen to 64.2% (Ibid.). Men age 65 and older in 1900 had a non-participation rate of 31.7%, which had risen to 80.9% by 1980.

Figure 3 portrays non-participation in the labor force by racial/ethnic group and gender in 1986. Rates of non-participation in the labor force were highest for Hispanic civilians as a group, with 44% not in the labor force and lowest for Black civilians, with 32% not in the labor force. Divided along race/ethnic and gender categories, Hispanic men had the lowest non-participation rate (18%) and Hispanic women had the highest rate with 62% not in the labor force. Not surprisingly White civilians (both men and women) had non-participation rates nearly equal to those of the total population.

FIGURE 1

WISCONSIN CIVILIAN POPULATION AGE 16+: 1986

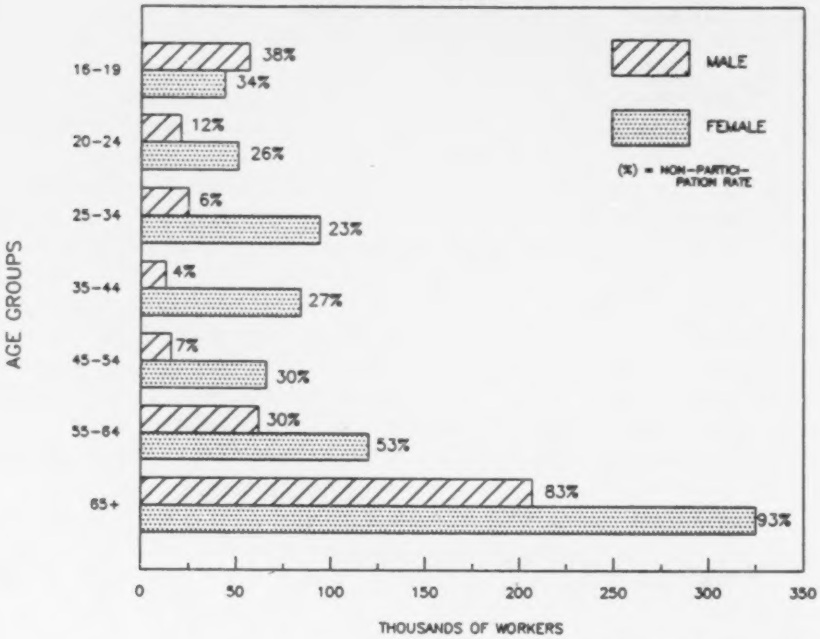

CIVILIAN POPULATION AGE 16+ 3,585,000
NOT IN LABOR FORCE 1,186,000
CIVILIAN LABOR FORCE 2,399,000
FULL TIME LABOR FORCE
PART TIME LABOR FORCE
USUALLY WORKING UNDER FULL TIME SCHEDULES 1,662,000
WORKING FULL TIME 1,522,000
INVOLUNTARILY WORKING PART TIME 140,000
UNEMPLOYED AND SEEKING FULL TIME WORK
UNEMPLOYED AND SEEKING PART TIME WORK
VOLUNTARILY WORKING PART TIME 459,000
TOTAL UNEMPLOYMENT 169,000

SOURCE: CPS, 1986, TABLES 12 & 13

FIGURE 2

PERSONS NOT IN THE LABOR FORCE BY AGE AND GENDER: 1986

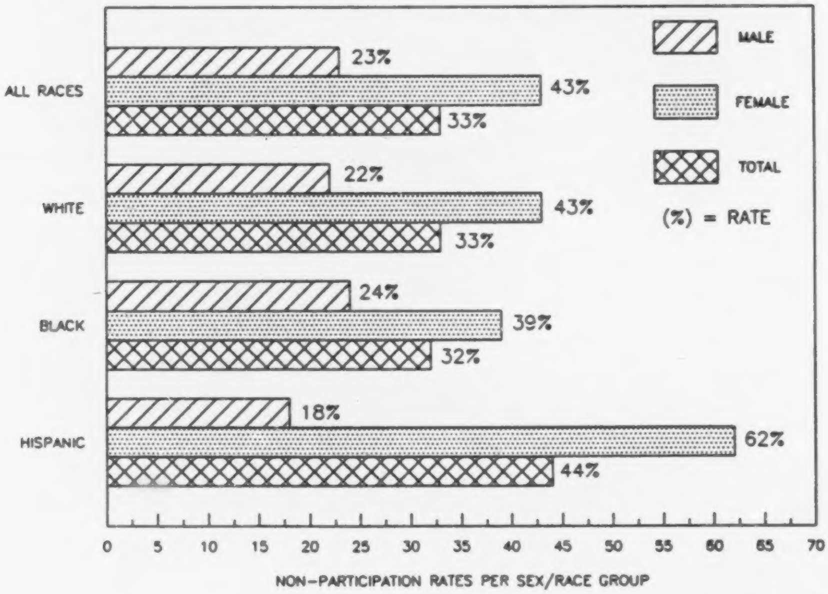
TOTAL = 1,186,000



SOURCE: CPS, TABLE 12, 1986

FIGURE 3

LABOR FORCE NON-PARTICIPATION RATES BY RACE/ETHNIC GROUP AND GENDER: 1986



SOURCE: CPS, TABLE 12, 1986

One other analysis of non-participation in the labor force concerns non-participation rates among marital status and gender groupings. Table 1, below, indicates that women (age 16 and older) in 1986 had the highest non-participation rates (60%) if they were divorced, widowed or had some other non-married status except that of being never-married. Women who were married with a spouse present in the household in 1986 had a non-participation rate of 41% whereas women who were single and never married had the lowest rates of non-participation (32%) in 1986. The "other marital" status includes divorced, separated and widowed women having children at home. Many of Wisconsin's displaced homemakers will be found in this group, and the group of single women who were never married may also contain some of Wisconsin's displaced homemakers.

The rates of non-participation in the labor force are expected to decrease for women in ages 20-54 through 1995. Men are expected to increase their rates of non-participation in the labor force in all age groups except the 25-34 year-old group through 1995. Figure 4, below, depicts actual rates of non-participation by gender in 1986 and the projected rates for 1995.

TABLE 1

LABOR FORCE NON-PARTICIPATION BY GENDER AND MARITAL STATUS: 1986

(IN THOUSANDS)

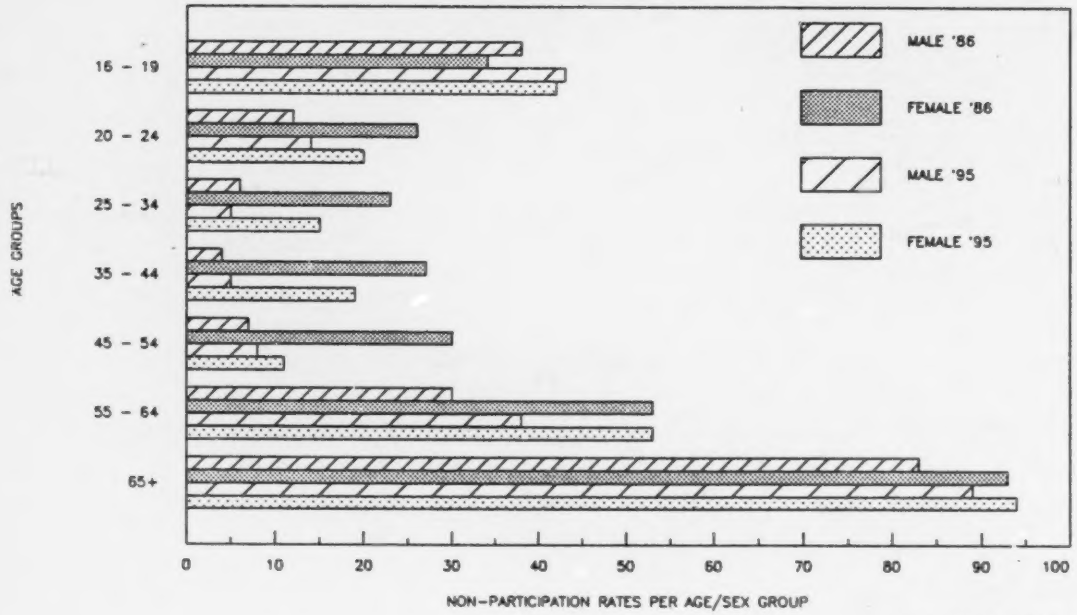
SEX	MARITAL STATUS 1/	POPULATION (AGE 16+) TOTAL	LABOR FORCE TOTAL	NON-LABOR FORCE TOTAL	LABOR FORCE NON-PARTICIPATION RATE
MEN:	SINGLE	490	370	120	24.5%
	MARRIED	1,090	869	221	20.3%
	OTHER	171	111	60	35.1%
	TOTAL	1,751	1,350	401	22.9%
WOMEN:	SINGLE	393	269	124	31.6%
	MARRIED	1,069	632	437	40.9%
	OTHER	372	149	223	59.9%
	TOTAL	1,834	1,050	784	42.7%
TOTAL:	SINGLE	883	639	244	27.6%
	MARRIED	2,159	1,501	658	30.5%
	OTHER	543	260	283	52.1%
	TOTAL	3,585	2,400	1,185	33.1%

1/ NOTE: "SINGLE" means never married and "MARRIED" means spouse present.

SOURCE: CPS, TABLE 12, 1986.

FIGURE 4

LABOR FORCE NON-PARTICIPATION RATES BY AGE AND GENDER: 1986 - 1995



SOURCE: CPS, TABLE 12, 1988

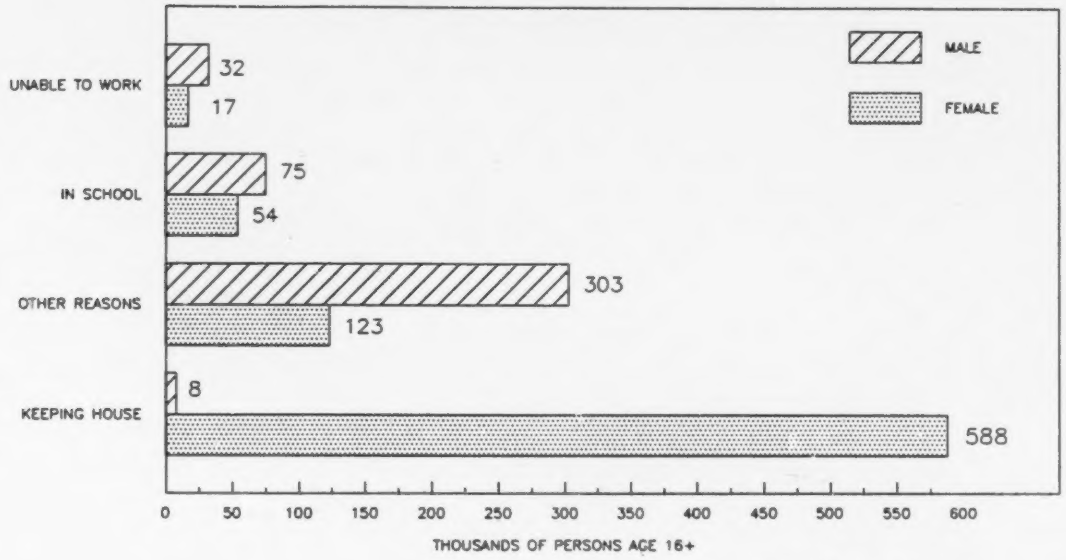
Women as a group are expected to lead men in non-participation in all age groups in 1990. By 1995, however, men's rates of labor force non-participation are expected to lead women's in the 16-24 age group and to be relatively close in the 45-54 age group. Overall, the most striking change is in women's decreasing labor force non-participation in all except the 16-19 and the 65+ age groups through the 1990s and the increase in men's non-participation rates in all except the 25-34 age group.

There are a number of reasons for non-participation in the labor force. In 1985, CPS-surveyed households were asked why their members were not in the labor force. About one-half of those not in the labor force were keeping house, 11% were in school, 4% were unable to work and the remaining 35% were out of the labor force for other reasons. Figure 5 depicts the distribution of those not in the labor force by reason for non-participation in 1985.

While many people willfully choose not to participate in or look for work in wage/salary jobs, some are assumed to be either unencouraged or discouraged workers. Unencouraged workers are unemployed and do not aggressively seek employment; however, they may choose a job if one becomes available and is suitable to their needs. This "contingent" labor force plays an important role in the labor market as it fills short-term needs of employers.

FIGURE 5

PERSONS NOT IN THE LABOR FORCE BY REASON AND GENDER: 1985



SOURCE: CPS, TABLE 10, 1985

Discouraged workers were also counted among the 1.18 million persons not in the labor force in 1986. This group has given up the search for employment because of a perceived or actual lack of suitable job opportunities. There is no specific "discouraged worker" category in the CPS questionnaire, hence it is difficult to estimate their number specifically. The 426,000 "other" people not in the labor force in 1985 may have included many of the so-called discouraged workers as well as those who did not describe themselves under any of the other non-labor force categories. Discouraged workers may have also described themselves as being students, keeping house or unable to work. The ambiguities of the CPS make an accurate analysis of the discouraged worker population unobtainable.

Persons unable to work totalled 49,000 in 1985, according to the CPS. Presumably some were unable to work because of a disability. Again, reasons for non-participation in the labor force were not ascertained in the 1986 CPS. However, of an estimated 109,000 employed workers who were not at work, 58% were on vacation, 20% were ill and less than 20% missed work because of bad weather. The most recent data on Wisconsin's disabled population (1980 Census) found 195,562 disabled persons between the ages of 16 and 64. Some 89,046 persons in this group were in the labor force, leaving 106,516 not in the labor force. A total of 85,298 disabled adults were prevented from working because of their disability. Considering CPS' 1985 count of 49,000 adults unable to work, it seems likely that many disabled people described themselves as "keeping house, student or other" or were not counted as part of the noninstitutionalized population. Again, the vagueness of available statistics makes a specific analysis of the disabled population's labor force participation problematic.

Labor force participation decisions involve many considerations. For some people, substantial barriers such as disabilities, literacy problems, discrimination, skill deficiencies, institutionalization and other barriers severely limit labor force participation. For other people, participation in the labor force may be contingent upon their non-labor force responsibilities, the availability of jobs and the value of the expected wages received from working in the labor force. Economists refer to a labor/leisure trade-off wherein "leisure" is considered to include all non-labor force activities. The trade-off for those people who can enter and leave the labor market will be contingent largely upon the relative value of leisure time compared to the value of wages and other benefits received from working. Non-work sources of income such as property income, transfer payments (i.e., AFDC, Social Security, SSI, etc.), spouse's income or other sources will largely affect the labor/leisure trade-off decision when the relative value of expected wages from work is considered. Thus programs and policies designed to address labor force participation should heed the various factors used in making the decision to work.

References:

Ehrenberg, Ronald G., and Robert S. Smith, Modern Labor Economics, 2nd Edition., 1985. Glenview, Illinois. Scott, Foresman and Company.

CHAPTER VIII
SPECIAL POPULATIONS

A. Estimates of the Population Eligible to Participate in Job Training Partnership Act Programs in Wisconsin

Estimates of Wisconsin's population eligible for JTPA Title II programs are provided on the following table for Program Year 1987 (year ending 6-30-88). The data should assist users in planning for changes in the number and makeup of economically disadvantaged people in Wisconsin. The most dramatic changes are expected from the movement of the baby boom generation through the population ranks, resulting in a sizable decrease in the number of youth and a corresponding increase in 22-25 year-olds by 1995.

An explanation of the procedure used to estimate the various JTPA-eligible groups follows in the Appendix. County data will be published in separate reports for each Service Delivery Area, available from local Job Service District offices. See Appendix B for definitions and procedures used in making the projections.

Table 1
WISCONSIN'S POPULATION ELIGIBLE FOR JTPA TITLE II PROGRAMS
1987-1995
(State Totals)

	Program Year 1987		1995 Projected	
	Number	Percent	Number	Percent
TOTAL	472,363	100.0%	486,169	100.0%
Male	206,212	43.7%	213,013	43.8%
Female	266,150	56.3%	273,156	56.1%
TOTAL YOUTH	108,482	23.0%	75,377	15.5%
Age 14-15	13,630	2.9%	14,050	2.8%
Age 16-21	94,852	20.1%	61,327	12.6%
Male	54,572	11.6%	36,852	7.5%
Female	53,910	11.4%	38,524	7.9%
TOTAL ADULTS	363,881	77.0%	410,792	84.4%
Age 22-54	333,041	70.5%	373,278	76.7%
Age 55-69	30,841	6.5%	37,514	7.7%
Male	151,640	32.1%	179,931	37.0%
Female	212,241	44.9%	230,860	47.4%
WHITE (NonHispanic)	391,032	82.8%	382,361	78.6%
MINORITY	81,331	17.2%	103,808	21.3%
Black	53,704	11.4%	67,402	13.8%
Hispanic	12,959	2.7%	16,619	3.4%
American Indian, Eskimo	8,509	1.8%	11,848	2.4%
Asian & Other	6,158	1.3%	7,939	1.6%
Handicapped	37,378	7.9%	44,975	9.2%
Displaced Homemakers	37,848	8.0%	69,359	14.2%
School Dropouts (16-69)	68,468	14.5%	109,028	22.4%
AFDC-WEOP, JTPA-Eligible	64,555	13.7%	41,531	8.5%
Teenage Parents	19,046	4.0%	17,127	3.5%
Public Assistance Recipients	161,737	34.2%	--	--
Offenders & Ex-Offenders	31,249	6.6%	11,219	2.3%
Veterans	52,197	11.1%	31,994	6.5%
Vietnam Era Vets	15,320	3.2%	15,046	3.0%
Refugees	19,572	4.1%	14,879	3.0%

SOURCE: DILHR, Division of Employment Training Policy, 1987

B. AN ANALYSIS OF WOMEN IN WISCONSIN'S LABOR FORCE

Since the early 1900's, women's participation in the labor force has become increasingly important. Their growing number has prompted much research focusing on various characteristics of women's employment. This chapter summarizes and updates some of the research and will focus on women's labor force participation, why women are employed, where women are employed and the wages they are earning relative to men.

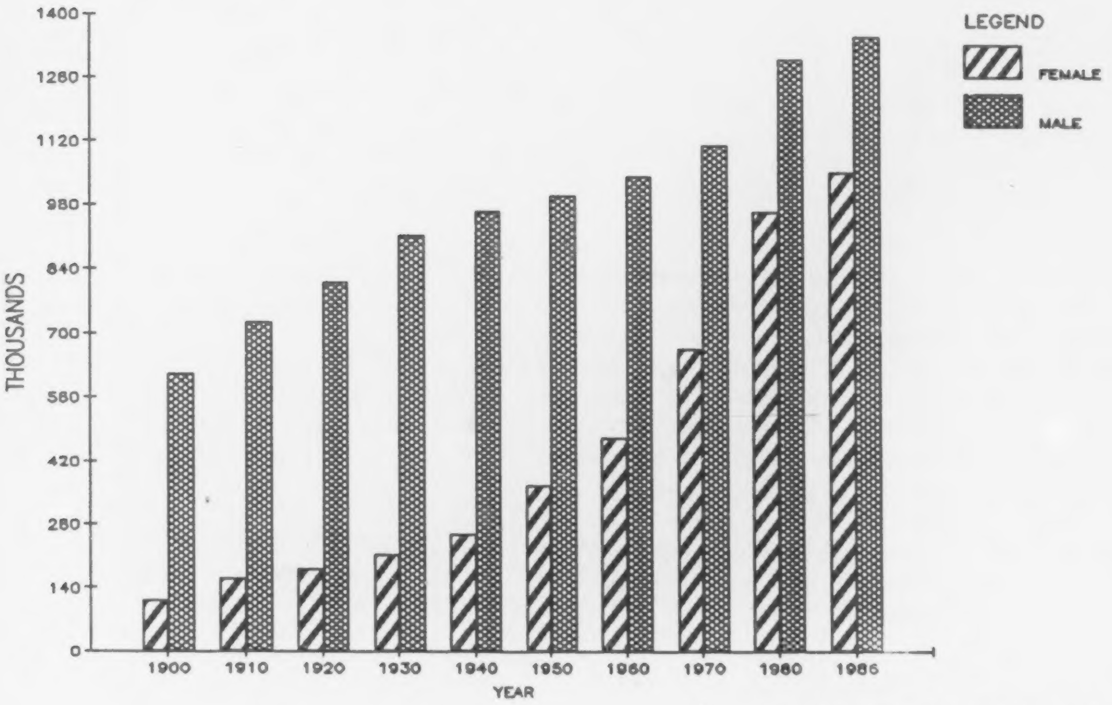
1. Women's Participation in the Labor Force

Women have played an increasingly important role in the labor force as their share of the labor force rose from 16% in 1900 to 44% in 1986 (see Figure 1). The labor force consists of all persons 16 years old and over who are either employed or unemployed and actively seeking work. The influx of women into the labor force has resulted in nearly equal labor force participation rates among Black, White and Hispanic women, with participation rates of 57%, 54% and 49%, respectively.

Of the women in the labor force, 28% who worked in nonagricultural industries held part-time jobs (less than 35 hours a week) in 1985, and over 75% of them were working part time on a voluntary basis. As the number of women in the labor force has increased, so has the number and proportion of women who are unemployed. See Figure 2 for a depiction of employment and unemployment for women in Wisconsin.

FIGURE 1

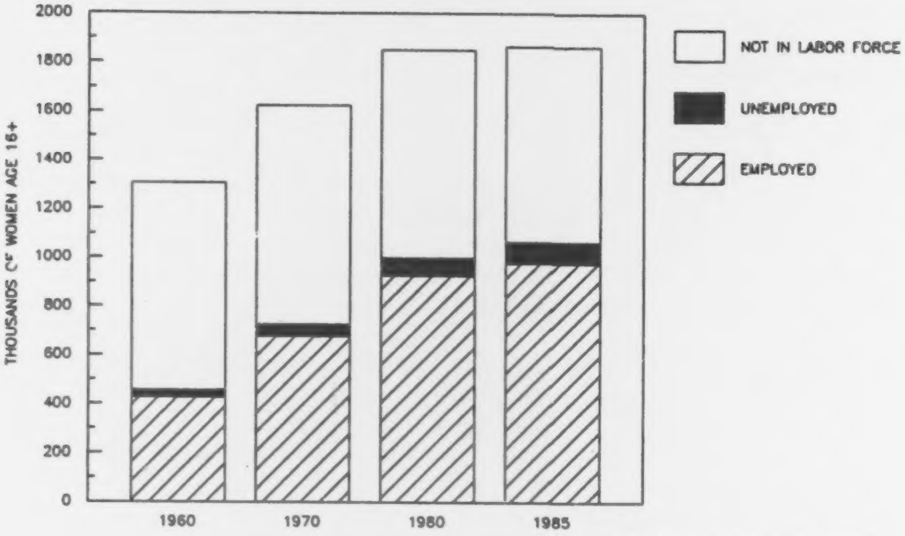
WISCONSIN LABOR FORCE BY SEX: 1900–86



SOURCE: CENSUS OF THE POPULATION

FIGURE 2

WOMEN'S LABOR FORCE PARTICIPATION IN WISCONSIN: 1960 - 1985



SOURCE: CPS, WISCONSIN TABLES

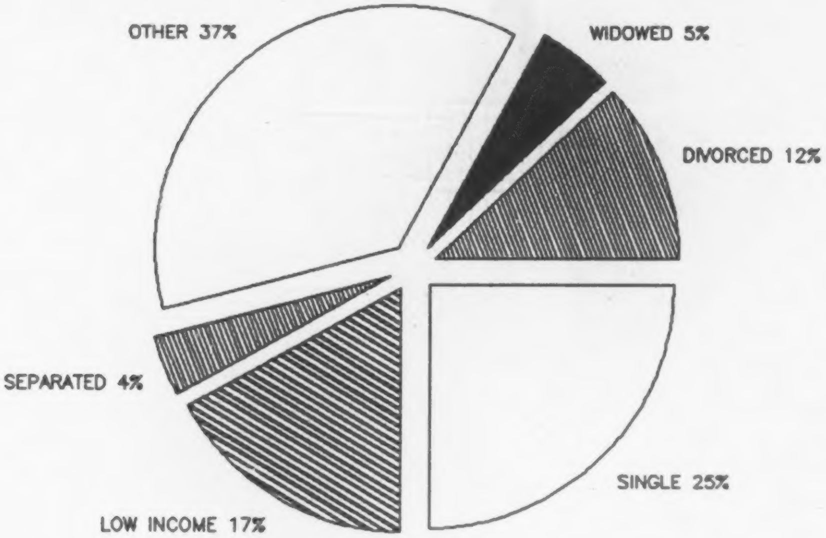
2. Economic Reasons for Women's Employment

Nearly two-thirds of all women in the nation's labor force in March, 1985, were working because of economic need. As seen in Figure 3, the majority of women were either single (25%), divorced (12%), widowed (5%), separated (4%), or had husbands whose 1984 earnings were less than $15,000 (17%).

Nationally, an increasing number of women have family maintenance responsibilities. In 1970, women maintained families in 6,695,000 households, and in the first quarter of 1987 this number rose to 10,553,000 households. According to the report, "Women in the American Economy" by Taeber and Valdisera (1986), women who maintain their own families generally have more serious economic problems than other women workers, including higher unemployment, lower average educational attainment and more children to rear on average.

Family incomes are substantially boosted when the wife is in the labor force. The proportion of married-couple families with the wife in the paid labor force rose from 40% in 1972 to 54% in 1984. In that year, the median income of married-couple families with the wife in the paid labor force was $34,668, compared with $23,582 for married-couple families with the wife not in the labor force.

FIGURE 3
WOMEN THE THE U.S. LABOR FORCE BY REASON: 1985



SOURCE: CPS, 1985

3. Women's Employment by Occupation and Industry

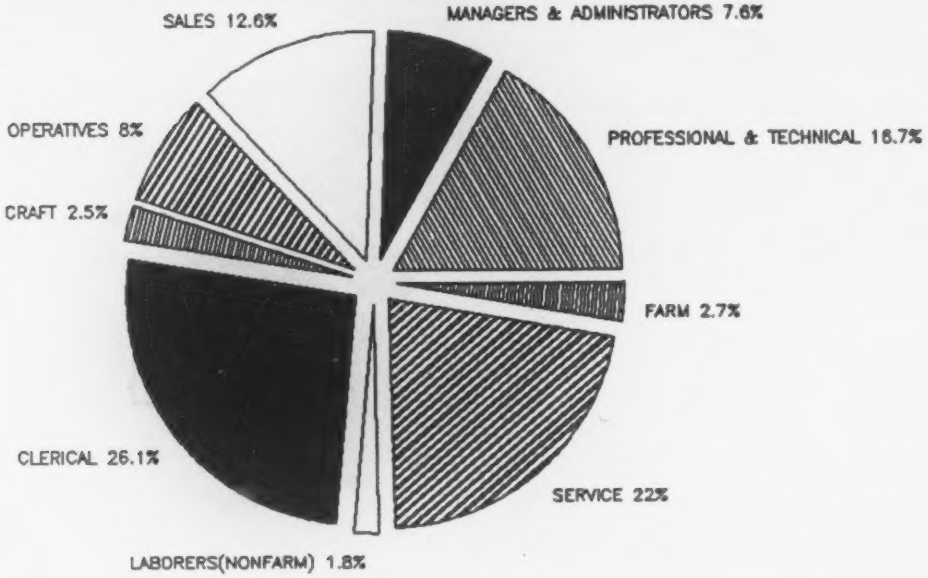
In the past fifteen years, more women have entered traditionally male-dominated occupations; however, women continue to constitute a large proportion of workers in traditionally female occupations. These occupations generally offer less pay, less on-the-job training, and less career mobility than traditionally male occupations. In 1986 almost 50% of women were concentrated in clerical and service occupations, while only 7.6% were managers and administrators. See Figure 4 for a depiction of women's employment in Wisconsin by occupation in 1986.

By industry, women dominate employment in the retail trade, finance, service and government sectors as seen below in Figure 5. Women are not heavily employed in mining, construction, transportation and wholesale trade. In these industries, women constitute less than 26% of the employment.

A 1985 study by the Small Business Administration noted that more women are choosing to be entrepreneurs--starting their own businesses (Wagner, 1983). Women-owned businesses represented 30.9% of the total nonfarm sole proprietorships in Wisconsin in 1983, while they brought in only 12.9% of the sales. The disparity in money is largely attributed to the fact that women own a greater number of lower-paying service and retail businesses rather than manufacturing and other higher-paying businesses.

FIGURE 4

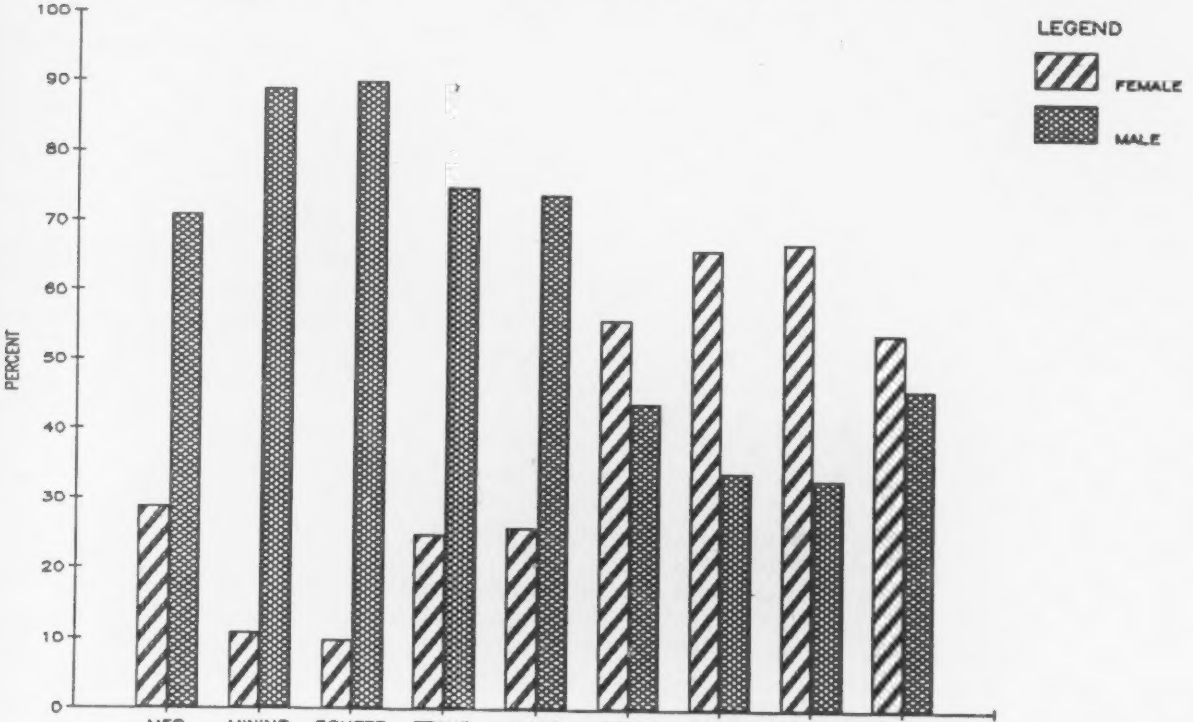
WOMEN'S EMPLOYMENT BY OCCUPATION: 1986



SOURCE: TABLE 15, CPS, 1986

FIGURE 5

EMPLOYMENT BY INDUSTRY AND SEX: 1986



SOURCE: CES, LMI-DILHR, 1987

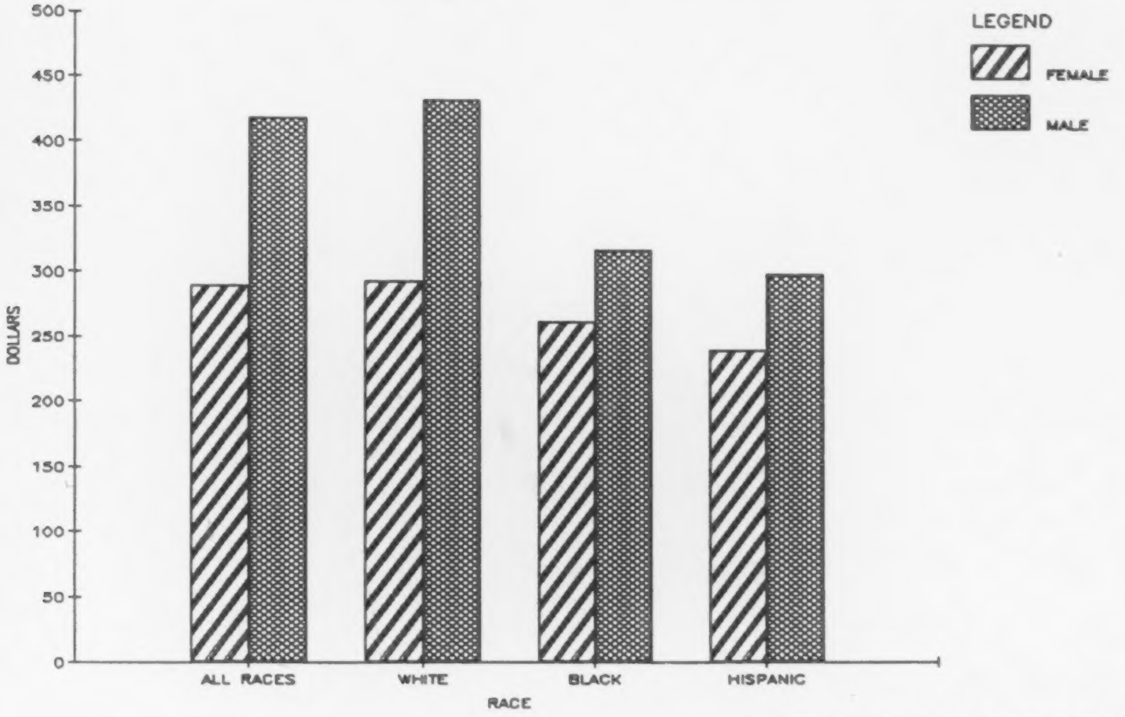
4. A Comparison of Women's and Men's Wages

In 1986, women, on average, earned only 69 cents for every dollar earned by men when both worked year round, full time. The median earnings of year-round full-time workers in 1986 was lowest for Hispanic women and highest for White men. See Figure 6, below, for a comparison of men's and women's median weekly earnings.

In the first quarter of 1985, the median income of women who were employed at full-time jobs was just 66 cents for every dollar made by full-time employed men. In the year 1900, when 21% of all women over age 16 were employed outside the home, the median income of women was 53.4 cents for every dollar earned by men. This translates into roughly 13 cents of progress on the pay equity issue in 85 years (in current dollars), with half of that progress coming in the last 12 years. At that overall rate, it would take approximately 300 years for women in this country to achieve pay equity with men. Even at the latter, more accelerated rate, it will still be almost 72 years before American women's median income equals American men's median income (Alder, 1986).

FIGURE 6

MEDIAN WEEKLY EARNINGS
BY RACE AND SEX IN THE U.S.: 1986



SOURCE: EMPLOYMENT AND EARNINGS, JAN 1987

According to a study done by the Wisconsin Women's Council, earnings for both women and men were found to increase with the acquisition of formal education. The level of educational attainment frequently determines not only the type of job a person obtains but also the level of work in a given occupation. Nevertheless, women earn substantially less than men at every level of educational attainment (Carr-Olsen, 1987). This fact becomes evident when 1986 earnings are observed. Women high school graduates (with no college) working year round, full time, had a median income slightly lower than that of full time men working year round who had completed less than 8 years of elementary school-- $14,569 and $14,624 respectively. In a 1983 study, two Michigan researchers found the difference in factors such as men's and women's accumulated work experience and job-related skill accounts for only about one third of the wage gap between women and men. This study concluded that much of the gap may indeed reflect institutionalized discrimination against women in the working world (Alder, 1986).

Women's labor force participation experiences during the recent past in Wisconsin can be summarized by a few key statements:

- More women are entering the labor force and are staying there longer.
- Many women are in the labor force because of economic need, but their salaries are not always meeting this need.
- The occupations and industries that women are entering are still by and large traditional, but more women are moving into non-traditional fields.
- The wage gap still exists and shows no sign of disappearing in the near future.

REFERENCES

Alder, Dana and Sheryl Head.
Services to Women in Wisconsin's Major Employment and Training Programs, Employment and Training Policy Series, No. 4, Madison, Wisconsin, Wisconsin Department of Industry, Labor, and Human Relations, Division of Employment and Training Policy, 1986.

Carr-Olson, Jacqueline.
Profile on the Economic Status of Wisconsin Women, Madison, WI, Wisconsin Women's Council, 1987.

Taeber, Cynthia M. and Victor Valdisera.
Women in the American Economy, Current Population Report Series P-23, No. 146, Washington D.C., U.S. Bureau of the Census, November, 1986.

U.S. Bureau of Labor Statistics.
Employment and Earnings, Washington D.C., U.S. Bureau of Labor Statistics, April, 1987.

Labor Force Statistics Derived From The Current Poplation Survey: A Databook. Vol. 1, Washington D.C., 1981

Wagner, Mary T.
"Wisconsin's Women Entrepreneurs," *Wisconsin Woman*, Vol.1 No. 3, June, 1987, pp. 42-48.

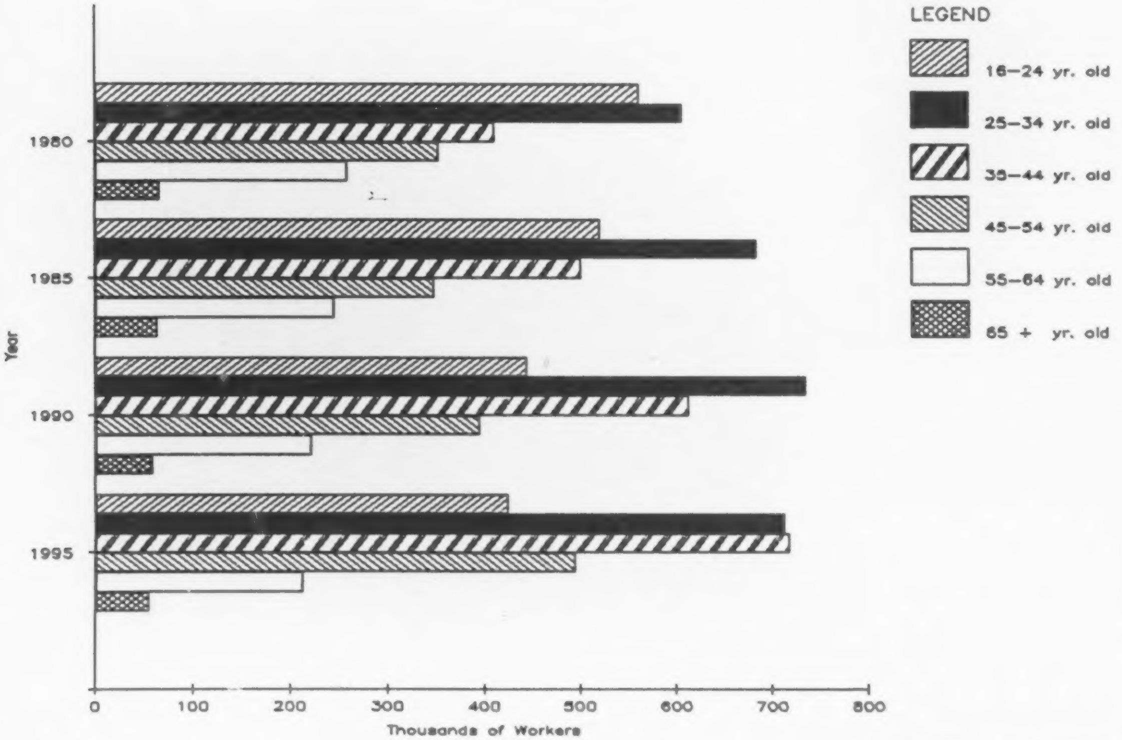
C. AN ANALYSIS OF OLDER WORKERS IN THE LABOR FORCE

Wisconsin's labor force is experiencing a changing age structure. Older workers are expected to increase in importance in upcoming years; their labor force participation will have a great impact on the social security system and pension progams as well as on the labor supply in general. In this section, these issues and the disincentives to employment for older workers will be examined along with the effects of unemployment on older workers.

Older workers are categorized by several different age groups, including: 40 years and older by the Federal Age Discrimination Act, 45 years and older by the U.S. Department of Labor, and 55 years and older by the Job Training Partnership Act. For this section, we follow the Job Training Partnership Act's age level of 55 years and older. In 1986, there were 336,000 people age 55 years and older, in Wisconsin's labor force, making up 14% of the total. By 1995 this age group is expected to account for only 10% of the state's labor force and is expected to number 270,000 participants. See Figure 1 for Wisconsin's labor force distribution by age and sex.

FIGURE 1

WISCONSIN'S LABOR FORCE BY AGE: 1980–95



SOURCE: DILHR–LMI, OCTOBER 1986

A major problem for many older workers is lengthy spells of unemployment. According to U.S. Department of Labor estimates, the average duration of unemployment for older workers was 50% longer than the average duration for all unemployed persons in 1986. The average for all unemployed persons was 16.0 weeks, and the average for the older worker was 24.3 weeks. While youth 16-19 years old faced higher unemployment rates, they faced shorter spans of unemployment of only 8.8 weeks on average. The older workers facing longer periods of unemployment are more likely to become discouraged and drop out of the labor force (U.S. Bureau of Labor Statistics, May, 1987).

Comparing the unemployment rates of older workers with the total unemployment rate, older workers appear to be relatively less affected. The unemployment rate for persons age 55 and over in Wisconsin in 1986 was 2.8% compared to the average of 7.0% for all unemployed persons. The Select Committee on Aging found that older workers have been disproportionately represented among discouraged workers. Discouraged workers are those workers who want jobs and are available for work but are not looking because they feel they could not find a job for a variety of reasons. In 1982, older workers made up 23% of discouraged workers nationwide, while comprising only 14% of the labor force (Pepper, 1982).

The personal losses related to unemployment can be severe. According to the Select Committee on Aging, older workers quite often have higher wages, stronger loyalties and more friends at work. They also frequently have higher financial burdens caused by mortgages, car payments and the costs of children. If older workers are fortunate enough to find another job after unemployment, they usually face lower wages and lower job status. Unemployment has also been shown to contribute to poor mental and physical health. The unemployed are more likely to suffer from low self-esteem, depression, anxiety and tension, high blood pressure and other stress-related diseases (Ibid).

Two of the reasons cited for unemployment of the older worker include age discrimination and company policies. The number of age discrimination complaints has greatly increased in recent years. Information available from the U.S. Equal Employment Opportunity Commission shows an increase in the number of charges from 5,374 in 1979 to 14,865 in FY 1983. This represents an increase of over 176% in a four-year period. The increasing number of complaints could be attributed to the increasing number of layoffs of older workers and the increase in "voluntary" early retirements during the recession (U.S. Equal Employment Opportunity Commission, 1983).

Many companies today are offering early retirement to older workers to reduce payroll expenditures. However, many of these retirements are not voluntary, but represent the choice between permanent layoff and voluntary retirement. Layoffs and plant closings also greatly affect older workers because of the difficulty of returning to the labor force. Some laid-off older workers become discouraged, face discrimination in hiring and face lower job status and pay. Thus, layoffs affect older workers relatively more negatively than younger workers.

Many myths surrounding older workers perpetuate their employment discrimination. The perception that physical and mental capabilities decrease with age has pushed older workers out of the labor force. A report by the Special Committee on Aging, found that physical and mental capabilities do not change enough with age to affect job performance. They concluded that the sensory processes of hearing, vision, taste, touch and smell become less acute over time but the process is extremely gradual. Under today's circumstances, most jobs are well within the physical capabilities of older workers and therefore the types of physical changes experienced with aging have virtually no practical effect on job capabilities. As with physical changes, the evidence does not indicate that intelligence, learning ability, memory or motivation decline with aging, or if so, not until very late in life. With regard to learning ability, research has demonstrated that the ability to learn and apply new information continues almost infinitely and that while older persons sometimes require more time to learn - due to their tendency to be more cautious - subsequent performance is not affected. Since intellectual ability does not decline with age, learning can continue well into old age.

It has been demonstrated that age stereotypes and organizational personnel practices have had serious consequences on the motivation of older employees. This problem may be caused by inappropriate responses by managers to older workers whose need for recognition for performance and continued job learning remains high. Managers have been found to transfer older employees, more often not to refer them for training opportunities and promote them less often despite the fact that their qualifications equaled those of younger workers. Often older employees recognize age stereotyping and therefore become less motivated. It appears that in most cases, the loss of motivation is being attributed erroneously to age when in fact it is related to organizational barriers to continued growth and development which differentially affect older employees. For many older workers, opportunities for continued job growth, training and variety of assignment are more important than monetary benefits in terms of maintaining motivation (Ibid.).

Root (1983) found that training a 50-year-old worker who will continue working until retirement could be more cost effective than training a twenty-five-year-old who could leave for another employer. The retraining of older workers is associated with an increase in their earnings because in part they already possess basic work skills and habits and also, with greater family responsibilities, are more likely to take advantage of retraining. Historically, however, federal vocational education funds and employment and training monies have been primarily aimed at younger individuals and others among the disadvantaged (Helwig, 1984). Retraining is also important in light of the fact that we will have a shortage of young people who will be available for labor force participation. Retraining must be focused on available jobs and needed skills; adult learning should be skill-oriented rather than focused on mastering a body of knowledge as in traditional education (Ibid).

Many programs are currently responding to the needs of older workers at federal, state and local levels by retraining them with new skills and placing them in jobs. The Institute of Gerontology at the University of Michigan has established a National Older Worker Information System to be used as a resource for older workers and related personnel practices and policies. The information system has received support from the U.S. Administration on Aging to contact employers about alternatives for productive use of all workers. They have published reports which list alternative employment practices which emphasize the stability, critical skills and dedication of older workers (Institute of Gerontology, 1983).

Some solutions to greater labor force participation by older workers include:

- Stronger enforcement of the age discrimination laws; increased funding and staffing to expand coverage (Pepper, 1982).
- Increased education about the characteristics of older workers to break down the barriers to hiring, promotion, retention and retraining.
- Continued federal and state programs aimed at retraining older workers and counseling in job search skills.
- Encouraging private industry to invest an equitable amount of time and money on the retraining of older workers based on the fact that all employees need frequent skill enhancement. New skills and responsibilities will keep motivation and productivity up (Root, 1983).
- Discourage early retirements to avoid the loss of valuable talent too early.
- Encourage part-time work arrangements without age restrictions. This allows for a gradual dependence on Social Security and pensions as income and allows for an orderly transfer of responsibility from a former employee in a position to the new employee. It also allows for a training or initiation period for the new employee. National surveys have found that large numbers of retirees would prefer to be working if they could work part-time (Root, 1983).
- Eliminate stereotyping of older workers.

REFERENCES

Helwig, Andrew.

Alternative Training Options for Structurally Unemployed Older Workers, National Center for Research in Vocational Education, Information Series # 275. Columbus, Ohio, Ohio State University, 1983.

Institute of Gerontology.

National Older Workers Information System Ideapac: Personnel Practices for an Aging Workforce. Ann Arbor, Michigan, University of Michigan, 1983.

Pepper, Claude.

The Unemployment Crisis Facing Older Americans. Washington, D.C., U.S. House of Representatives Select Committee on Aging, October, 1982.

Root, Lawrence S.

and Laura H. Zarrugh, Innovative Employment Practices for Older Americans, Research Report Series. Washington D.C., National Commission for Employment Policy, Spring, 1983.

U.S. Bureau of Labor Statistics. Employment and Earnings. Washington, D.C., May, 1987.

U.S. Equal Employment Opportunity Commission.

18th Annual Report - 1983. Washington, D.C., April, 1984.

U.S. Senate Special Committee on Aging.

The Costs Of Employing Older Workers. Washington, D.C., U.S. Government Printing Office, 1984.

D. YOUTH EMPLOYMENT AND UNEMPLOYMENT: CURRENT STATUS AND EXPECTED CHANGES

1. Current Status

In 1986 there were an estimated 278,000 persons in Wisconsin who were 16 to 19 years old, making up 7.7% of the total civilian population of all persons aged 16 years and older (U.S. Department of Labor, 1987). The 16-to-19-year-olds, as a group, had a labor force participation rate of 63.7% with their 177,000 workers. Their participation rate was slightly lower than the 67% participation rate of all other persons who were age 20 and older. Some 148,000 youth aged 16 to 19 years were employed in 1986, leaving 29,000 unemployed. The 16.3% youth unemployment rate in 1986 was over twice that of the total labor force's unemployment rate of 7.0%. Table 1 below summarizes some key characteristics of Wisconsin's 1986 youth population.

Table 1

WISCONSIN'S YOUTH (AGES 16-19) POPULATION
BY SEX AND RACE: 1986

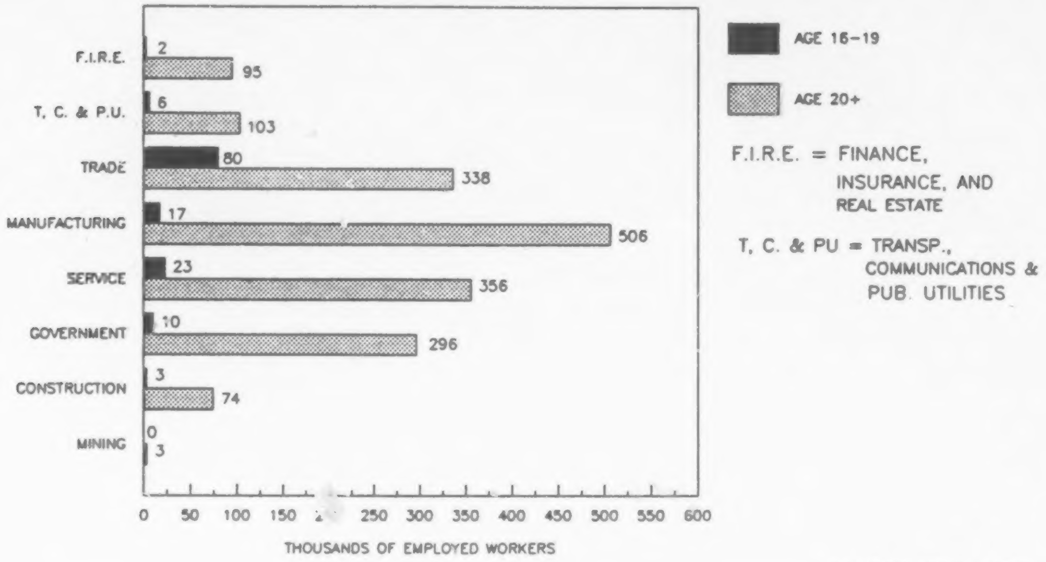
(numbers in thousands)

	CIVILIAN POPULATION	CIVILIAN LABOR FORCE	LABOR FORCE PARTICIPATION RATE	EMPLOYMENT	UNEMPLOYMENT[1]	
					NUMBER	PERCENT
TOTAL	278	177	63.7%	148	29	16.3%
MALE	149	92	61.7%	73	19	20.9%
FEMALE	129	85	66.1%	76	10	11.4%
WHITE	255	166	65.1%	142	24	14.2%
BLACK	17	10	60.5%	5	5	51.5%
HISPANIC	2	1	40.6%	–	1	100.0%

(SOURCE: U.S. Dept. of Labor, Bureau of Labor Statistics, Current Population Survey, Wisconsin, Table 12, 1986.)

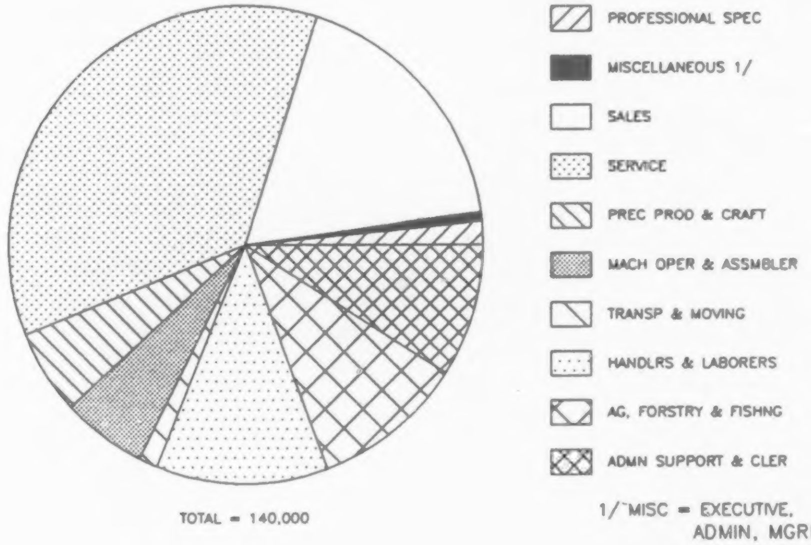
[1] NOTE: The error ranges for the unemployment rates for youth were as follows: Black = 28.8 to 74.2; Hispanic = 42.2 to 158.8; White = 10.2 to 18.2; and, total youth = 12.2 to 20.4. Due to the small survey sample size and the resulting wide ranges of error rates, caution should be used when interpreting youth unemployment statistics.

FIGURE 1
WISCONSIN INDUSTRY EMPLOYMENT BY AGE: 1985



SOURCE: CPS, 1985

FIGURE 2
WISCONSIN OCCUPATIONAL EMPLOYMENT BY AGE 16-19
1986



1/ MISC = EXECUTIVE, ADMIN, MGRL, TECH & REL SUPPORT

SOURCE: CPS, TABLE 15, 1986

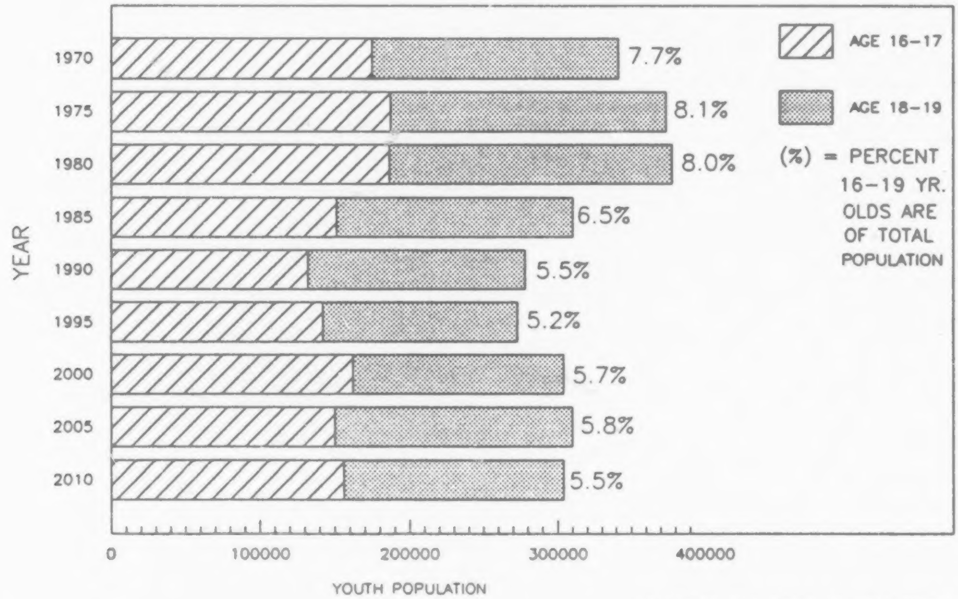
Youth in Wisconsin have been employed disproportionately in service industry businesses, and largely involved in service, construction and administrative support occupations. Figure 1, below, shows an industrial employment distribution of persons 16-19 years old and 20 years old and older in Wisconsin in 1985. Figure 2 depicts the occupational employment distribution for 16-19 year-olds in 1986. While no industrial sector has even a moderately sizable amount of workers under the age of 20, trade is most affected by youth employment as nearly 20% of its workforce was under the age of 20 in 1985. Occupational distribution of all working youth in ages 16 to 19 finds 35% in service jobs totalling 53,280 in 1986. Handler, equipment cleaner and laborer occupations were held by 17,464 youth, and some 13,320 youth worked in administrative support and clerical positions in 1986. Youth in this age group hold a disproportionately large share of low-skill, low-wage occupations when compared with other age groups. Given this group's relatively lower level of education and lower levels of accumulated skill and experience, their occupational distribution is not surprising. Notwithstanding, the dependence on youth labor by some industries is critical in particular labor markets; youth labor is sometimes considered the only sector of the total labor force willing to accept the relatively low wages offered by some the service and trade businesses.

2. Changes in the Youth Population and Labor Force

As noted in Chapter II, Wisconsin's youth population has been decreasing. Lower fertility rates of baby boom-era women, although tempered by the child-bearing of relatively large numbers of women born in the boom period, had resulted in slower growth rates of youth in the recent past. Figure 3 below shows the relative size of and changes in the group of 16-19 year olds in Wisconsin from 1970 through 2010.

FIGURE 3

WISCONSIN'S YOUTH POPULATION: 1970 - 2010



(SOURCE: WIS DEPT OF ADMINISTRATION, 1984)

Schoenfield (1987) notes that the trend of decreasing youth population is expected to end in the mid-1990s and expected to grow to a stable level in the early 2000s. The period from 1980 to 1995 will likely witness a decrease in Wisconsin's youth population (ages 16-19) from 377,761 to 266,070. The drop of 111,691 older teenagers will be felt initially by the trade and service industries as their businesses search for more workers.

The combined growth of industries which employ many youth (service and trade) and the continual decrease in the number of youth were expected to reduce joblessness for youth in the 1980s (Nardone, 1987). Recent research found that despite population declines for youth nationwide, their unemployment rates have been increasing in the 1980s. Table 2, below, depicts the population/unemployment relationship for youth in the 1980s.

TABLE 2

POPULATION AND UNEMPLOYMENT CHANGES FOR YOUTH, AGES 16-24, FROM 1979 TO 1986

(NATIONAL-LEVEL CPS DATA)

AGE	PERCENTAGE POINT CHANGE IN UNEMPLOYMENT RATES	PERCENT DECLINE IN POPULATION
16-17 years old	+2.1	-12.0%
18-19 years old	+2.3	-14.0%
20-24 years old	+1.6	- 3.9%

Source: Nardone, Op. Cit.

Youth labor force participation also declined in this period, which should have contributed to lower unemployment rates. Nardone found that between 1979 and 1983 nationwide, labor force participation rates decreased for 16-19 year-olds by an average of 4.85 percentage points; 16-17 year-olds' as a group had a decrease of 7.04 percentage points (Op. Cit.). One other phenomenon occurring in the youth labor market has been the increasing number of youth who are unable to find full-time work and must settle for part-time work. Nardone also found this decline was most severe for older youth (18-24 years old) during the 1979-1986 period.

The combination of lower labor force participation rates, a decreasing population, increasing unemployment rates and an increase in involuntary part-time work suggests a slackness in the youth labor market to which Nardone offers a few explanations. Young workers have relatively less education, fewer skills and less experience than other workers and are less appealing to employers. Competitiveness from other groups of workers, i.e., dislocated workers, immigrants and older workers, have aggravated the employment opportunities for youth in the 1980s. Thus youth will face their best prospects for employment during periods of high aggregate demand when the most preferred workers are in short supply and employers turn to the relatively less desirable, younger workers.

The downturn in manufacturing employment in the 1980s also limited the employment success of younger workers (Nardone, Op. Cit.). Prior to the recessions of the early 1980s, according to Nardone, the manufacturing sector was a major employer of youths, especially of out-of-school males. Given the relative concentration of young male workers in manufacturing in the late 1970s, the downturn in total employment in that industry may partially explain the relative differences in unemployment between young men and women. Nardone concluded that while continual population decreases for youth may lead to improvements in employment opportunities, the data from the first one-half of the 1980s indicates that youth unemployment problems will not be easily overcome.

Recent unemployment experiences of youth in Wisconsin found 19,000 males and 10,000 females of ages 16-19 unemployed in 1986 (U.S. Department of Labor, 1986). The overall youth (16-19 years old) unemployment rate was 16.3%; however, the males' rate was 20.9% and the females' rate was 11.4% (Ibid.). The 1986 unemployment rate for males was nearly five percentage points higher than their rate in 1985, whereas the female youth unemployment rate in Wisconsin in 1986 was 1.6 percentage points lower than their rate in 1985.

The future changes expected for the youth labor force will be driven by the demographic and economic changes expected to occur. As stated earlier, the youth population (ages 16 to 19) will decrease by 111,691 fewer 16 to 19 years in 1995 than there were in 1980. The labor force participation rate for male 16 to 19 year olds is expected to drop from its 1986 level of 61.7% to a 1990 level of 57%. That rate is expected to be stable throughout the early-to-mid-1990s for 16-19-year-old males in Wisconsin. Females in this age group are also expected to experience a decreasing labor force participation rate from their 1986 level of 66.1% to an expected 1990 level of 56.0%. In the early-to-mid-1990s, the 16-19-year-old females' participation rate is expected to increase slightly to 58%. The anticipated decline in population and labor force participation combined are expected to propel the impending youth labor shortage of the 1990s.

Expected implications of the youth labor shortage generally concern technological change and labor market adjustments. Business analysts have cited increased automation as a likely response to the shortage of youth labor (Brannigan, 1986). However, given the relative importance of youth in industries such as the hotel, restaurant, retail trade and other service industries, the prospect for automation replacing youth labor seems unlikely to have a very large impact. The "hands-on" nature of personal services and retail trade does not appear to allow for much mechanization.

Labor market adjustments in response to fewer youth workers include greater labor force participation among older persons, disabled persons and others who have not regularly participated in the labor force. The results of immigration reform are also expected to fill a labor force gap left by fewer youth. Employers are expected to make adjustments to the workplace such as day-care, flextime, variable benefits and transportation services to encourage greater non-youth employment.

In another context, economist Sar Levitan (1986) has suggested that young people will have higher labor force participation rates in the future because they will not be able to pay for higher education or because the attractions of longer education will diminish. Cutbacks in federal support, Levitan argues, may discourage some youth from attending college, particularly as the costs of education continue to rise. The National Association of Trade and Technical Schools recently projected a 6% increase in the cost of a college education in 1986, which will be the third consecutive year of 6%-7% increases. Additionally, Levitan feels that the prestige of a college degree is declining as the supply of graduates has increased at a faster rate than the number of jobs requiring degrees. He supports this hypothesis by citing BLS figures which indicate 90% of college graduates in the 1960s found jobs in managerial, professional or administrative occupations, while three of every ten had to settle for lesser jobs in the 1970s. Hence, greater youth labor force participation, the shift to non-labor inputs (automation), the easing of immigration laws and greater employment of older workers have all been cited as possible solutions for the impending youth labor shortage.

While the total number of available jobs may exceed the number of available youth, much concern is being expressed currently over the skill/education mismatch between jobs and workers in the future. National attention to the waning quality of primary and secondary education suggests that employers may face greater training costs to prepare poorly-educated workers for jobs. Without improvements in the quality of schools or in the literacy of graduates, employers may have to substitute better-educated workers for the ill-equipped youth of the future. However, given the nature of the high growth jobs of the future, many new jobs may be able to be filled by youth or others with minimal levels of education, which may also deter their motivation for higher education.

Unemployment may still be a severe problem for minority youth in the future if the growth in new jobs occurs away from central cities. The location of economic development in the future will bear upon the employment and income needs of minority youth unless transportation services are improved to connect labor to jobs or unless jobs are created in the central cities. Until unemployment rates for minority youth significantly decrease from their current levels (40.8% for black youth, 22.5% for Hispanic youth in Wisconsin in 1985), the suggestion of a youth labor shortage will remain in question. In response to minority youth unemployment and youth labor shortages, industry has offered transportation and higher wages for inner-city youth. Hence, the training implications of the expected changes in the youth population will primarily concern literacy and basic skills as a foundation for job-specific vocational training.

References

Brannigan, Martha.
"A Shortage of Youths Brings Wide Changes to the Labor Market." *Wall Street Journal*, September 2, 1986.

Levitan, Sar A.
"The Workplace in 1986." *EMA Journal*, Summer, 1986.

Nardone, Thomas.
"Decline in Youth Population Does Not Lead To Lower Jobless Rates." *Monthly Labor Review*, June, 1987.

Schoenfield, Michael A.
A Profile of The Youth of Wisconsin: An Assessment of Need for Those Entering The Labor Force. Madison: Wisconsin Department of Industry, Labor and Human Relations, Division of Employment and Training Policy, 1987 Staff Paper, Mimeographed.

U.S. Bureau of Labor Statistics.
Current Population Survey, 1986, Wisconsin Tables. Washington, D.C. (Unpublished).

E. DISABLED ADULTS IN WISCONSIN'S LABOR FORCE

1. Characteristics

In 1980, the last time when a specific count of the population was taken, Wisconsin had 195,562 disabled[1] adults aged 18-64 years accounting for 7% of the state's total population in that age group (U.S. Census Bureau, 1985). Table 1, below, depicts Wisconsin's disabled population in the 18-64-year-old age group in 1980.

TABLE 1

WISCONSIN'S DISABLED POPULATION AGES 18-64: 1980

				WITH A DISABILITY					
				TOTAL		ABLE TO WORK		UNABLE TO WORK	
	TOTAL POPULATION AGE 18-64	WITH NO DISABILITY NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL
TOTAL	2,760,719	2,565,157	92.9%	195,562	7.1%	110,264	4.0%	85,298	3.1%
MEN	1,359,651	1,253,302	92.2%	106,349	7.8%	66,893	4.9%	39,456	2.9%
WOMEN	1,401,068	1,311,855	93.6%	89,213	6.4%	43,371	3.1%	45,842	3.3%
RACE									
WHITE	2,622,413	2,441,319	93.1%	181,094	6.9%	103,481	3.9%	77,613	3.0%
BLACK	96,978	85,739	88.4%	11,239	11.6%	5,165	5.3%	6,074	6.3%
HISPANIC	32,165	30,001	93.3%	2,164	6.7%	1,051	3.3%	1,113	3.5%
AGE DISTRIBUTION									
18-34 YRS	1,379,646	1,327,245	96.2%	52,401	3.8%	40,055	2.9%	12,346	0.9%
35-54 YRS	948,246	878,719	92.7%	69,527	7.3%	42,073	4.4%	27,454	2.9%
55-64 YRS	432,827	359,193	83.0%	73,634	17.0%	28,136	6.5%	45,498	10.5%
LABOR FORCE STATUS									
IN LABOR FORCE	2,111,834	2,022,788	95.8%	88,956	4.2%	88,956	4.2%	-	-
EMPLOYED	1,976,406	1,897,477	96.0%	78,929	4.0%	78,929	4.0%	-	-
UNEMPLOYED	135,428	125,311	92.5%	10,117	7.5%	10,117	7.5%	-	-
UNEMPLOYMENT RATE	6.4%	6.2%	-	11.4%	-	11.4%	-	-	-
NOT IN LABOR FORCE	648,885	542,369	83.6%	106,516	16.4%	21,218	3.3%	85,298	13.1%

(SOURCE: U.S. CENSUS, 1980, PC80-S1-

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[1] Note: People are classified as disabled if they reported a health problem or disability which prevented them from working or limited the amount or kind of work they could do, if they reported a service-connected disability, if they ever retired from or left a job for health reasons, if they did not work in the survey week at all the week before due to illness or disability, if they were under 65 years or age and covered by Medicare, or if they were under 65 years of age and received Supplemental Security Income benefits (Bowe, 1985, Op. Cit.).

In 1980, Wisconsin ranked 46th in the nation in the proportion of disabled persons in the working-age group. Some 7.1% of the total population age 18-64 in Wisconsin reported having a disability which placed the state below the national average of 8.5% (Bowe, 1984). A 1981 analysis of U.S. Census data found that the "typical" working American was 34 years old, a high school graduate, married, in the labor force, working full time and earned about $8,000 income from all sources (Ibid.). The "typical" working-age disabled American was 50 years old, a high school graduate, married, not in the labor force, and earned about $5,000 in income from all sources (Ibid). Hence, from the aggregate point-of-view, disabled persons tended to be much older, much less well-educated and much less likely to participate in the labor force than non-disabled persons. In contrast, disabled Americans who did work in 1980 held jobs and earned income at levels similar to those of non-disabled workers. Because relatively fewer disabled adults work, the incidence of poverty will be relatively greater among this group when compared to non-disabled adults.

In Wisconsin, the Census data revealed patterns of characteristics similar to those found in national data when disabled and non-disabled population groups are compared. Table 1, above, showed a greater proportion of disabled adult males than females despite there being more working-age females than males in the state's 1980 population. Further, the age distribution of disabled adults finds 38% of the total group in the 55-64 year-old age group and 27% in the 18-34 year-old group. The non-disabled population found only 14% in the 55-64 year-old age group and 52% in the 18-34 year-old groups (U.S. Census Bureau, Op. Cit.). While the 55-64 year old disabled adults accounted for only 17% of all 55-64 year-olds in Wisconsin in 1980, this group also accounted for 38% of all disabled adults, and over 50% of all disabled adults who were unable to work. Hence a positive correlation was seen between age and incidence of a disability and between age and being unable to work. A negative correlation was found between age and being unable to work with a disability condition.

Labor force participation rates were lower for the disabled adult population in Wisconsin in 1980 when compared to the non-disabled population. Some 45% of all working-age disabled adults participated in Wisconsin's labor force in 1980, whereas 79% of the non-disabled adult population participated in the labor force. It is the working age disabled adults who are able to work to whom most employment-related rehabilitation and training programs are directed. Over 56% of all disabled adults in Wisconsin in 1980 were able to work; some 88,956 (or 81% of all disabled adults who were able to work) people in this group participated in the labor force. Over 10,000 disabled workers were unemployed in 1980, giving the disabled work force an unemployment rate of 11.4%. Another 21,218 disabled adults who were able to work did not participate in the labor force in 1980. Over two-thirds of the non-participants who were disabled but not prevented from working were women; however, they made up only 34% of the disabled's total number of unemployed. Thus it appears that disabled women (who are not prevented from working by their disability) may be a good source of new labor force participants; training program planners should be aware of this group for targeting training programs.

Disabled adults in Wisconsin in 1980 had relatively lower levels of education when compared to non-disabled adults. Some 19% of the total non-disabled population aged 18-64 years had less than a high school education, whereas 42% of the total disabled population were in the same educational category. The distribution of people with some college education was similar between disabled and non-disabled adults in 1980; 15% of disabled (but not prevented from working) workers had some college education, and 18% of all non-disabled adults had some college education. The most divergent sub-group was the disabled group who were unable to work. In 1980, only 8% of this group had some college education, whereas 53% had less than a high-school education. Hence, disabled adults who were able to work had levels of educational attainment that were similar to those of the non-disabled working-age population.

The Current Population Survey (CPS), an annual household survey run by the Census Bureau for the Department of Labor, counted some 49,000 persons (age 16 and older) in Wisconsin in 1985 who were not able to work. Presumably most people in this group were unable to participate in the labor force because of a disability. Comparing the census count of 85,298 adults being unable to work in 1980 and the CPS count of 49,000 adults being unable to work in 1985, the differences may be attributed to the differences in the survey questions. The CPS allows respondents the following choices for non-participation in the labor force: in school, keeping house, unable to work, and other reasons. Hence, some disabled adults responding to the CPS may have indicated "in school, keeping house, or other reasons" for their non-participation response.

The occupational distribution of Wisconsin's disabled and non-disabled population seen below in Table 2 reveals a few key observations. As a group, adults with a disability in 1980 were more likely to work in service, agricultural, forestry and fishing, precision production, craft and repair and fabricator, operator and laborer occupations than were adults with no disabilities. The non-disabled group of adults had a higher concentration of managerial and professional specialties and technical, sales and administrative support workers than did disabled adults in 1980 in Wisconsin.

TABLE 2

WISCONSIN'S DISABLED POPULATION AGES 18-64 BY OCCUPATION AND GENDER: 1980

				WITH A DISABILITY					
				TOTAL		ABLE TO WORK		UNABLE TO WORK	
	TOTAL POPULATION AGE 18-64	WITH NO DISABILITY NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL	NUMBER	% OF TOTAL
TOTAL	2,429,679	2,296,530	94.5%	133,099	5.5%	99,416	4.1%	33,683	1.4%
MEN	1,313,583	1,229,788	93.6%	83,745	6.4%	64,401	4.9%	19,344	1.5%
WOMEN	1,116,096	1,066,742	95.6%	49,354	4.4%	35,015	3.1%	14,339	1.3%
MANAGERIAL & PROF. SPECIALITIES	456,423	438,498	96.1%	17,925	3.9%	14,687	3.2%	3,238	0.7%
TECH., SALES AND ADMIN. SUPPORT	667,639	637,783	95.5%	29,856	4.5%	23,135	3.5%	6,721	1.0%
SERVICE OCCUPATIONS	342,797	318,964	93.0%	23,833	7.0%	16,881	4.9%	6,952	2.0%
AGRIC., FORESTRY, & FISHING	109,298	100,997	92.4%	8,301	7.6%	6,285	5.8%	2,016	1.8%
PRECISION PRODUCT & CRAFT & REPAIR	295,993	278,892	94.2%	17,101	5.8%	12,545	4.2%	4,556	1.5%
FABRICATORS, OPERATORS & LABORERS	557,529	521,396	93.5%	36,133	6.5%	25,883	4.6%	10,250	1.8%

(SOURCE: U.S. CENSUS, PC80-S1-20,1980)

2. Implications of Wisconsin's Adult Disabled Population Trends

An overview of Wisconsin's disabled adult population can be seen from both pessimistic and optimistic perspectives. When workers suffer a disability which prevents continued and/or full participation in their occupations, earnings are curtailed or eliminated, income is drastically lowered, and the fulfillment of working for pay is reduced. Levitan and Taggart (1977) found that the mean annual earnings of disabled workers were roughly seven-tenths of those of non-disabled workers, and that households with a disabled adult must do with a third less income than would other households. The researchers also noted that the economy is general suffers from workers' disabilities because of the loss of their skills, their reduced earnings and the cost of the income transfer programs needed to support and/or rehabilitate the disabled persons (Op. Cit.). Federal outlays of more than $28 billion in 1977 for income transfer and other support for disabled persons were noted by Levitan and Taggart in their study.

In Wisconsin, the major programs providing income transfer and vocational rehabilitation are administrated by the Department of Health and Social Services (DHSS). Fiscal Year 1986 (year ending September 30, 1986) found DHSS's Division of Vocational Rehabilitation (DVR) receiving $33,064,795 in state and federal funds (Wisconsin Department of Health and Social Services, 1986). The DVR served 47,507 clients in FY 1986, disbursing some $10,492,730 in service-related costs. Some $7,891,789 were spent on training and $939,840 on occupational equipment and placement services. Over 6,000 DVR clients were rehabilitated, 95% of whom entered the labor force as either wage/salary workers or self-employed workers.

The Department of Industry, Labor and Human Relations (DILHR), through its Job Training Partnership Act (JTPA) program, had disbursed over $58 million in program funds to serve over 51,000 persons in 1985 (Wisconsin DILHR, 1986). Of the 41,191 persons enrolled in JTPA programs throughout the state in 1985-86, some 17,975 were placed in jobs. There were 7,350 handicapped persons enrolled in JTPA programs in PY '85, making up 17.8% of the total enrollment, and 2,685 were placed in jobs. The handicapped persons' job placements made up 15% of all placements.

The Wisconsin Job Service also serves disabled workers and jobseekers. In PY 1986 (the year ending June 30, 1987), Job Service had 400,276 available job applicants and provided services to 227,166 (Wisconsin DILHR, 1987). Some 69,441 applicants found jobs either though direct placement by Job Service or though some assistance from Job Service. Some 16,393 applicants in PY 1986 were handicapped, making up 4% of the total applicant pool. Some 3,199 found employment making up 4.6% of the total group of placed workers. The handicapped had an employment placement rate of 19.5% in PY 1986 whereas only 17% of all non-handicapped applicants had found employment through Job Service.

The other major financial disbursement program for disabled workers is administered by DHSS's Social Security Disability Insurance Bureau. In FY 1986, some 54,000 disabled workers received an average of $556.00 every month through the SSA Title II program. Another 68,000 disabled workers received an average of $372.00 through the Title 16 program. Combined, some 122,000 disabled workers in Wisconsin received $663,600,000 in state and federal income transfers in FY 1986 through DHSS's SSDI programs.

From a positive perspective, the disabled working-age population has also been seen as being part of the solution to the impending youth labor shortage. Feuer (1987) found that employers are more interested than ever to training and employing handicapped persons. As one example, he noted that the 7-Eleven franchisees in Philadelphia recently joined forces with a community-based organization to train and employ 18 disabled persons. The company's program was a success and the management was pleased with the special efforts made by the CBO to accommodate the new hires' training needs.

While disabled persons have access to labor force participation opportunities and access to services for training, income support and rehabilitation, as a group they are disportionately affected by labor market changes. Levitan and Taggart (Op. Cit.) found that in bad times, disabled workers become the most expendable workers and are most likely to lose out in the competition for jobs to non-disabled jobseekers. Disabled persons are also adversely affected by structural changes in the economy which reduce the number of lower-skilled, low-paying jobs to which they are disportionately relegated.

The labor force changes anticipated for the future bode well for disabled workers. William Dennis, Senior Research Fellow at the National Federation of Independent Business, identified a few trends in the labor force which are favorable for disabled workers (American Foundation for the Blind, et al., 1986). Dennis suggested that technological advancements in the workplace i.e., computerization, and the shift from physical to mental work, will benefit the labor force participation of disabled workers. Smaller business sizes and the practice of working at home for companies will also facilitate disabled workers' competitiveness for jobs. The expectation of more people living longer and working longer concerns disabled people inasmuch as their retraining will need to be expanded to accommodate job changes throughout life. Finally, Dennis noted, the aging of the baby boom generation will witness more of this group moving into middle management and carrying their "social change" values with them. Thus, Dennis concludes, economic, demographic, technological and social changes all appear to support greater workplace opportunities for disabled people (Op. Cit.).

REFERENCES

American Foundation for the Blind and the President's Committee on Employment of the Handicapped.
The Future of Work for Disabled People: Employment and New Technology. New York: American Foundation for the Blind, 1986.

Bowe, Frank
Disabled Adults in America. Washington, D.C.: The President's Committee on Employment of the Handicapped, 1985.

U.S. Census and Disabled Adults: The 50 States and the District of Columbia. Staff Paper, Mimeographed. University of Arkansas, Arkansas Rehabilitation Research and Training Center, April, 1985.

Feuer, Dale
"Coping with the Labor Shortage." Training, March, 1987.

Levitan, Sar and Robert Taggart
"Employment Problems of Disabled Persons". Monthly Labor Review, Vol. 100, No. 3, March, 1977.

U.S. Bureau of the Census.
Selected Characteristics of Persons with a Work Disability by State: 1980. Supplementary Report PC80-S1-20. Washington, D.C., 1985.

Wisconsin Department of Health and Social Services
Division of Vocational Rehabilitation Annual Report, 1986. Madison, Wisconsin: Division of Vocational Rehabilitation, 1986.

Wisconsin Department of Industry, Labor and Human Relations
Job Service Information System Annual Summary Tables for PY '85 and PY '86. Madison, Wisconsin: Division of Employment and Training Policy, 1987.

CHAPTER IX

Labor Market Information Resources

A. Annotated References to Additional Labor Market Information and Research Literature.

Labor Market Information is a term which can be applied to a wide variety of data and analysis. Broadly defined, labor market information includes not only information about the labor force, but also about the economic, demographic and social context in which the labor force operates. Labor market analysts use data from several government agencies together with information from newspapers, journals, academic research and personal observation to provide analysis of the current situation, forces and trends in the labor market. The articles in this Planning Information for Employment, Training and Industrial Development illustrate the varied resources used in labor market analysis. In addition to the cited references, there are others which may be useful for comparison or local analysis.

There are some basic sources of labor market statistics. The most detailed data comes from the decennial Census of Population and Housing from the U.S. Bureau of the Census. What is gained in detail, however, is lost in timeliness. Because the census occurs only every ten years, the data loses some of its value.

To gather data between census years, the Bureau of the Census conducts monthly the Current Population Survey (CPS). The CPS is a sample survey, gathered in all fifty states. Each month the same questions about labor force participation are asked of the sample households; in specified months there are additional questions which collect other information about income, education, fertility and households. Because it is a sample some data is not valid except at the national level, however, limited data is available at state and metropolitan area levels. The U.S. Bureau of Labor Statistics is the major user of CPS data. CPS statistics are used in calculating the states' unemployment, labor force and employment statistics each month. The Bureau of Labor Statistics publishes this data in a variety of sources:

> Employment and Earnings is a monthly periodical which presents data from the Current Population Survey and other BLS statistical programs. It is a primary source of statistical data for the United States and on a limited basis for states.
>
> The Monthly Labor Review includes statistics from the full range of BLS programs, including labor force statistics, the Consumer Price Index, the Producer Price Index, and the Employment Cost Index. The Monthly Labor Review also carries articles providing explanation and analysis of recurring BLS programs and special or experimental statistical programs.
>
> The annual Geographic Profile of Employment and Unemployment gives the most detailed statistics for the states' labor markets. It provides annual data from the Current Population Survey and includes employment and unemployment for race, sex, occupation and industry. Data is included for Wisconsin, the Milwaukee PMSA (Milwaukee, Ozaukee, Washington, Waukesha and Racine counties), and the Milwaukee central city.

There are also monthly news releases which contain information about the U.S. and the states. The "Employment Situation" and "State and Metro Area Employment and Unemployment" are two primary releases.

The Bureau of the Census also publishes data from the CPS. The major report series, Current Population Reports, presents the most detailed national data. There are reports about voting patterns, fertility, child care, income, poverty, population, women, blacks, Hispanics and many other subjects. Other agencies use the CPS data, notably the Women's Bureau in the U.S. Department of Labor. Most of the statistics which they compile about women in the United States are from the CPS.

Information about economic trends also comes from a number of sources. The monthly Economic Indicators from the U.S. Joint Economic Committee presents basic national data about Gross National Product (GNP), the various components of GNP, the labor force and more. The Bureau of Economic Affairs (BEA) in the U.S. Department of Commerce produces several statistical series commonly used in labor market analysis. Their publications include the Survey of Current Business (monthly), U.S. Industrial Outlook (annual) and Local Area Personal Income (annual). An annual compilation of statistics and analysis is the Economic Report of the President.

For a more complete description of labor market information, its concepts, definitions, and sources, the book, Cracking the Labor Market (Center for Policy Research and Analysis, National Governors' Association, 1986) is excellent. The book also has descriptions and exercises for how to use labor market information. The list of references is lengthy and includes a wide range of materials from a variety of sources.

The authors of this report's chapters used many resources of labor market information. For further exploration of the issues discussed in this report, the following chapter-by-chapter review of information sources will assist those who need a more thorough analysis of economic conditions in Wisconsin.

Chapter II: Demographic Analysis.

Demographic data is available for both the nation and the state. Basic population statistics come from the decennial census. This information is updated, for the nation, in the CPS Report Series P-25, Population Estimates. This series also presents state data in special reports throughout the year. The primary source of population estimates for Wisconsin and its counties, cities, towns and villages, is Official Population Estimates for (year). This report is prepared by the Demographic Services Center in the Wisconsin Department of Administration. The data are is of January 1st of the year, and it is released in late fall of the same year. The Demographic Services Center also prepares projections of the Wisconsin population and reports analyzing trends in various segments of the population. Statistics on births and deaths in Wisconsin come from the Center for Health Statistics, Wisconsin Department of Health and Social Services; the data is published in the agency's annual report, Vital Statistics.

The citations at the end of Chapter II reflect the numerous possibilities for finding information about demographic change in Wisconsin. Basic statistical estimates, both current and projected, come from the Demographic

Services Center. Armed with basic statistics, many agencies, businesses and schools provide analysis which makes the statistics understandable and useful in planning by government, educational institutions and businesses. Some excellent sources of analysis are: Bureau of the Census, Current Population Report Series 20 and 23, Applied Population Laboratory (University of Wisconsin-Madison, Department of Rural Sociology), American Demographics (a monthly magazine). Articles in newspapers and popular magazines also provide insight into national and state population changes.

The Demographic Services Center and the Applied Population Laboratory are the lead agencies for the Wisconsin Data Center. These agencies, along with affiliate organizations in libraries and other agencies throughout the state, provide users with the wide range of data from the Bureau of the Census and other government agencies. A list of the Data Center affiliates appears later in this chapter.

Chapter III: Labor Force Analysis

Most data used to do current labor force analysis comes from the Current Population Survey. Information about state and metropolitan area labor force participation and characteristics of the labor force is published in the Geographic Profile of Employment and Unemployment each year. National data is published in Employment and Earnings each month; annual averages are published in January.

Data and analysis of Wisconsin's employment and unemployment are published monthly in several publications from the Bureau of Labor Market Information. Near the end of each month, current state labor force statistics are released at a news conference. This data is published 2-3 weeks later in Wisconsin's Employment Picture, which also includes labor force statistics for each county and metropolitan statistical area. The monthly Wisconsin Economic Indicators presents economic statistics which enhance analysts' ability to understand the changes in the state's labor force. On the local level, Job Service labor market analysts publish local labor force statistics in the Employment Review (available through Job Service offices; see the list in the next section). Local newspapers, national magazines and regional magazines are all good sources of synthesized and analyzed information about the economy and the labor force.

Chapter IV: Labor Demand

The Bureau of Labor Market Information, in cooperation with the U.S. Bureau of Labor Statistics, collects and publishes data about industrial and occupational employment in Wisconsin. There are two data collection programs which gather information on employment by industry: the Current Employment Statistics (CES) program and the ES-202 program. The CES program collects data about employment, hours and earnings from a sample of Wisconsin employers throughout the state. This data is published each month in both Wisconsin's Employment Picture and Wisconsin Economic Indicators. Limited data is available for the metropolitan statistical areas, which is published in the local Employment Reviews.

The ES-202 program collects data from each employer covered by Wisconsin's Unemployment Compensation Law. Statistics of employment by industry and average weekly wages by industry are published quarterly for the state and counties. Other tables of data are published annually and give information about size of employing establishments, taxes collected and annualized employment and wages.

Still another published source of employment by industry is County Business Patterns, produced by the Bureau of the Census. This data is presented for each county and may show employment at the 4-digit SIC level. While it is a good source of information, there is a considerable time lag until publication; 1985 data for Wisconsin is now available in fall of 1987.

The Occupational Employment Statistics (OES) program collects data about occupational employment from a random sample of Wisconsin employers. OES publications give occupational employment by industry for all industries over a three-year cycle. This data is used to create the occupational and industrial projections for the state. The most recent Wisconsin projections are available in Wisconsin Industrial and Occupational Projections to 1995.

National projections on the economy, the labor force, and on occupational and industrial employment to the year 2000 can be found in an article in the September, 1987, Monthly Labor Review.

Chapter V: Labor Supply

The data used in this chapter's preparation was taken directly from Job Service Information System (JSIS) computer files. The data can be obtained from DILHR's Labor Market Information Bureau.

Chapter VI: Industrial Change

A. Plant Openings and Closings

The data used in this subchapter was generated Unemployment Compensation files through a specially created database. The tables seen in this subchapter are also available for each SDA, from DILHR's Labor Market Information Bureau. The Wisconsin Department of Development (DOD) also tracks plant opening and expansion activity for manufacturing industries. Their annual report on plant openings and expansions can be obtained directly from DOD at 123 W. Washington Ave., Madison, WI 53703.

B. Agriculture Industry Changes and Impacts

Information about the agriculture industry is both easy and difficult to find. In Wisconsin, the Statistical Reporting Service in the Department of Agriculture, Trade and Consumer Protection collects data about all aspects of the state's farm industry. There are several monthly publications which give information about crops and livestock in the state. The Department's annual report, Wisconsin Agricultural Statistics, summarizes this information. Data for the United States comes from various branches of the Department of Agriculture and is published in many reports available from the Government Printing Office.

Another source of statistics about farming is the Survey of Agriculture conducted by the U.S. Bureau of the Census every five years. When published, there is data for the nation, states and counties. Analysis of the data, nationally, is provided by the Economic Research Service (ERS) in the Department of Agriculture. In addition to analyzing the farm data, the ERS also looks at farming in the context of the wider economy, the family and other specific industries. The bibliography with this chapter indicates some of these research reports.

While there seems to be a large quantity of data about agriculture, there is little good information about the farming labor force. A little data about hired farm workers can be found in the Census of Agriculture. Bureau of Labor Statistics' data collection programs do not survey farms at all. Estimates of farm employment are usually unofficial and may not be very reliable.

In addition, if one looks at the agriculture industry in its wider sense, often called agri-business, it is even more difficult to get an accurate picture of employment. Businesses which deal mostly with agriculture are scattered throughout the industrial spectrum, and it is hard to separate outthose businesses from the larger industry, especially at state and local levels. It seems that university agricultural research departments and the Economic Research Service are major sources for understanding of the agriculture industry.

C. Service Industry Changes

Statistics necessary to begin to analyze the service industry come from a small variety of data collection programs. A basic source is the Census of Service Industries conducted every five years by the U.S. Bureau of the Census. The reports for each state include statewide and metropolitan area data for employment and payroll with an industry breakdown to the 4-digit SIC level.

An annual source of data for service industries is County Business Patterns, also prepared by the Bureau of the Census. While the time lag for publication of this data is long (1985 Wisconsin data became available in fall, 1987), this is an excellent source of industry detail for the state and for counties.

Unpublished data from the Current Employment Statistics program also provides analysts in the Wisconsin Bureau of Labor Market Information with information about recent changes in employment and shifts in employment from one industry to another.

Currently, there is much interest in the service industry and its growth. Analysis of these changes is available in popular magazines, business magazines, the Wall Street Journal and recently published books.

Chapter VII: Population Not in the Labor Force

Almost all of the data about people not in the labor force is collected in the Current Population Survey. The data for Wisconsin is not published data but is provided to the Bureau of Labor Market Information by the Bureau of Labor Statistics to assist in labor market analysis.

National data is published quarterly in Employment and Earnings, in January, April, July and October, with annual averages in the January issue. This data includes statistics on the sex and age of persons and the reason they are not in the labor force. One table looks at the work-seeking intentions of persons not in the labor force.

Chapter VIII: Special Populations

Information about special segments of the population is a little tricky to find. Basic statistics, especially for state and local areas, come from the decennial censuses. Some of the data can be updated with the Current Population Survey statistics. Often, analysts look to national trends for understanding about both more current statistics and more current contexts and problems.

- Women

This subchapter cites the most current local reports about women in Wisconsin. National sources are numerous; articles in newspapers and magazines refer to studies and reports from many agencies and institutions. American Demographics and the Monthly Labor Review include articles about women in the labor force. A new report from the Current Population Survey is Women in the American Economy; this report is the latest of several special analyses of women from the Bureau of the Census. Another compilation of information about women in the labor force is Time of Change: 1983 Handbook on Women Workers, from the Bureau of Labor Statistics; though dated, the statistics in this report can be updated with more current CPS data.

The June, 1987, Monthly Labor Review contains a comparison of women's and men's median earnings in 200 occupations in 1986. Though the data is national, this is one of the few sources for this type of information. Earnings data is also available for previous years.

- Older workers

There are currently many questions about older workers in the labor force. The aging baby boom generation, the increase in longevity and the decrease in the numbers of younger people all combine to cause a careful look at population and labor force projections. The most recent discussion of these issues is in the September, 1987, Monthly Labor Review. The Bureau of Labor Statistics has recently released projections of labor force, industrial employment and occupational employment to the year 2000. A similar discussion for Wisconsin can be found in Wisconsin Industrial and Occupational Projections to 1995 from the Bureau of Labor Market Information. The article in this report presents some of the difficulties facing older workers. The Area Offices on Aging throughout Wisconsin are another source of information about these issues and a range of other concerns.

- Youth

There is great interest currently in the employment situation of youth. In general, youth are defined as persons between 16 and 24 years of age. Statistics for this age group are often divided into two groups, 16 to 19 and 20 to 24 years. Unfortunately, one cannot always find the exact grouping that is needed. Current national statistics appear in Employment and Earnings. Limited Wisconsin data is in the Geographic Profile of Employment and Unemployment. The information in this chapter is mostly from unpublished data from the Current Population Survey.

Analysis of trends in the employment of this group is readily available in the popular and scholarly press. Frequently interest is divided along age groupings because the employment of teenagers raises particular questions. Issues of the experience and education and training of 20-to-24-year-olds is also of great interest.

- Disabled Adults

Statistics about disabled persons, and particularly about disabled persons in the labor force, are scarce. With so many agencies and groups working with disabled persons, it is frustrating to know that there is very little data, especially on a state or local level.

The 1980 Census provides the only statistics for the state and counties about the disabled population and their employment. The Supplementary Report cited in this section gives the most detailed data available. A new source of national data is the Survey of Income and Program Participation (SIPP) conducted by the Bureau of the Census. The SIPP Survey is a household survey conducted monthly, though in a different way from the Current Population Survey. Data from SIPP is also reported as series of the Current Population Reports, Series P-70, Household Economic Studies. Series Report No. 8, Disability, Functional Limitation and Health Insurance Coverage: 1984/85, presents data from the survey. The introduction to the report states, "A major purpose of the questions was to allow researchers and policymakers to learn more about the relationship between disability and program participation, but the data also have a more general interest in that they show the extent of disablement among the noninstitutional population and show how the characteristics of the disabled differ from those of the nondisabled." There is some data about the labor force participation of disabled persons in the report.

B. Key Information Resources in Wisconsin

There are many places where one can go to find information and resources about Wisconsin, its economy and its labor force. These four lists contain the names of major collections of data.

The labor market analysts in Job Service offices work closely with the Bureau of Labor Market Information and local business to provide the public, educators, businesses and public officials with information about local labor market conditions. The analysts have a network of contacts which can help provide information about locations throughout the state.

The list of State Document Depositories is a list of larger libraries in the state which have been designated by the Division for Library Services to maintain collections of state documents. Most of the publications of the Bureau of Labor Market Information are available at the depository libraries.

The State Data Center and Affiliates lists many of the same libraries as the depository libraries list. The Data Center Affiliates receive many reports from the Bureau of the Census, and staff are trained to help users find the data they need.

Regional Planning Commissions are agencies which analyze and synthesize labor market information. Frequently, they produce reports which give information about the locality which they cover. They are a good source of local data and analysis.

APPENDIX A

INDUSTRIAL AND OCCUPATIONAL EMPLOYMENT PROJECTIONS METHODOLOGY

1. Overview

The Occupational Employment Statistics (OES) Program started in the early 1970's and is comprised of three components: occupational surveys by industry; an industry-occupational matrix; and projections. The projection process is also divided into three segments: industry projections, application of the industry projections to the matrix, and the resulting occupational projections.

The industry projections were released late last fall (1986) using the input from a panel of fourteen experts. Since that time the industrial projections have been processed through the matrix program. This program applies the staffing patterns from 379 industries and converts the employment to occupations. This produced occupational employment for the base year (1985) and projected employment for 1995. The current run produced data for 723 occupations and 109 summary levels of occupations.

This report includes only nonagricultural wage and salary employment, and does not contain self-employed and unpaid family workers. (Many professionals and managers are self-employed, so these occupations tend to be understated.) The data base for this publication is place-of-work (reported by employers), which includes secondary jobs. About 5% of all workers hold a second job, but this is not evenly distributed between groups of occupations. A smaller than average proportion of secondary jobs are held by clerical, craft work and operative groups. Sales and service groups have traditionally had larger than average numbers of secondary jobs and the trend is increasing.

OES survey collection instruments, tailored to each industry's occupational structure, were limited to a maximum of 200 occupations. Total employment in each industry was collected by using appropriate residual categories. Occupations that were forced into residual categories due to the 200 occupation limit per industry were treated similarly in all industries. This method increased the size of the residuals, but was the most accurate way of treating occupations not fully covered by the survey.

"Average Annual Growth" may be of use in comparing projections with the number of workers entering the labor force each year, but it should not be assumed that changes in the labor force occur evenly. Businesses seldom expand or contract at a constant rate. Factors affecting them often cannot be anticipated, and reaction is sporadic. Business cycle fluctuations, beginning or ending of government programs, sudden changes in monetary and fiscal policy, technological break throughs and natural disasters are only some of the events that can cause abrupt changes in employment. These projections should be considered indicative of trends, and business cycles within the trends may move trends backward or forward by several years.

2. Assumptions

The assumptions that follow are the conditions under which the industry projections are made--such as no armed conflict or no basic changes in American institutions. In other words the status quo will remain in these areas. Variation from these criteria would alter the projections. These assumptions are similar to the ones used in projecting the United States economy or Labor Force; however, there are two notable exceptions, namely the absence of an assumed rate of unemployment and the use of somewhat higher participation rates than those used in national projections.

The assumptions are as follows:

- The United States will not be engaged in any military conflict, but defense expenditures will be sizable.
- A slowly rising Gross National Product will prevail in the general economy of the late 1980's and early 1990's, fiscal and monetary policies of the federal government will be conservative, and the rate of economic growth will be slower than during the early 1970's.
- There will be no major changes in the basic institutions in the American economy.
- The labor force will grow at decreasing rates throughout the late 1980's and early 1990's due to past declines in birth rates.
- Long-term industry employment trends are generally expected to continue.
- The trend toward a service-oriented economy from a goods-producing economy is expected to continue.
- Wisconsin's labor force growth generally parallels that recorded and projected for the nation. A larger percentage of women than previously will enter the labor force and a larger percentage of people will be seeking second jobs.
- There is no assumed unemployment rate.
- Ecological considerations will continue to play an important role in the growth of employment, but will be somewhat blunted by budget balancing pressures.
- Oil prices have stabilized, but the economy has continued to move ahead. The oil cartel shows no immediate signs of regrouping.

APPENDIX B

PROCEDURES USED TO ESTIMATE THE INCIDENCE OF JTPA TITLE II-ELIGIBLE GROUPS

Definitions of the Job Training Partnership Act (JTPA) Title II eligible population, targeted population subgroups, and the factors used to estimate the number and incidence in the JTPA-eligible population include the following:

1. TOTAL POPULATION ESTIMATES

The total number of persons eligible for services under Title II of the JTPA includes all individuals, age 14 through 69, who reside in a household with income less than or equal to the economically disadvantaged benchmark, which was defined by Congress as being either:

a. Living in a household receiving cash public assistance, or

b. Living in a household whose total annualized income was less than the official poverty line or 70% of the Bureau of Labor Statistics lower living standard income level for the geographic area in which they resided.

All methodological procedures used to estimate population sizes begin at the county level and are added to achieve Service Delivery Area (SDA) and State eligible population estimates. County population ratios of individuals by category residing in households with estimated incomes less than or equal to the economically disadvantaged benchmark were applied to county population projections for the current period which were supplied by the Demographic Services Center (DCS) of the Wisconsin Department of Administration. The Constant Proportion Share Method (CPSM) for small area demographic analysis was the methodology used, unless otherwise noted. Income data on the number of persons age 16 through 21 and 22+ residing in households with incomes less than or equal to the economically disadvantaged benchmark was supplied by the national Bureau of Labor Statistics (BLS) and was derived from the 1980 Census.

2. TOTAL YOUTH ESTIMATES

The total number of JTPA Title II-eligible youth, age 14 through 21, is defined as the total number of persons of that age category who reside in households with income less than or equal to the economically disadvantaged benchmark. The youth category was split into two dichotomous age cohorts, 14-15 and 16-21. Different methodologies were used to estimate the number of JTPA Title II-eligible persons at the county level in each category.

The number of economically disadvantaged persons in the 16-21 age category was supplied by BLS. Using the CPSM, the portion of economically disadvantaged youth in the 1980 age cohort was factored against the DCS projections for that age cohort to estimate the incidence in the current population for the 16-21 age cohort for each county.

The BLS did not supply data on the number of economically disadvantaged youth in the 14-15 age cohort. The estimate for this age cohort was derived by applying the portion of the total population in the 1980 census which was identified as living in households less than or equal to the economically disadvantaged benchmark, and applying this factor against the population projections supplied by DCS for the 14-15 age cohort on the county level.

The assumption used to derive this estimate was that the incidence of being economically disadvantaged for the 14-15 age cohort was the same on the county level as the overall rate of being economically disadvantaged for each county.

3. TOTAL ADULT ESTIMATES

The total number of JTPA Title II-eligible adults, age 22 through 69, is defined as the total number of persons of that age category who reside in households with income less than or equal to the economically disadvantaged benchmark. The adult category was split into two dichotomous age cohorts, 22-54 and 55-69. Different methodologies were used to estimate the number of JTPA Title II-eligible persons at the county level in each category.

The number of economically disadvantaged persons in the 22-54 age category was derived by using the CPSM and factoring the rate of economically disadvantaged adults in the total adult population in the 1980 Census on the county level against the county adult population estimates for the 22-54 age cohort. This results in an estimated number of economically disadvantaged adults ages 22-54 in each county for the current period.

The BLS did not supply data on the number of economically disadvantaged adults in the 55-69 age cohort. The estimate for this age cohort was derived by splitting the age cohort into two dichotomous age cohorts, 55-64 and 65-69 and estimating the eligible population on a county basis for each cohort. The number of economically disadvantaged persons in the 55-64 age category was estimated by using the CPSM and factoring the rate of economically disadvantaged adults in the total adult population in the 1980 Census on the county level against the county adult population estimates as supplied by DCS for the 55-64 age cohort. This results in an estimated number of economically disadvantaged adults ages 55-64 in each county for the current period. The number of JTPA-eligible persons who may be appropriate for JTPA services was estimated by using the CPSM and factoring the number of persons ages 65-69 in the 1980 Census on a county level who were unemployed and seeking employment against the DCS-supplied projection for the 65-69 age cohort for the current period on a county basis. The estimated number of JTPA-eligible persons in the 55-64 and 65-69 age categories was then added to estimate the number of JTPA Title-II eligible individuals in the 55-69 age category on a county level for the current period.

4. AGE COHORTS BY SEX

The population was split into two dichotomous categories by sex, and the number of females was estimated using the CPSM. The male category was estimated by subtracting the estimated number of JTPA Title II-eligible females from the total population size for each county.

The BLS did not supply data on the number of economically disadvantaged females in the 1980 Census. The estimates for females were obtained by establishing the number of females in the 1980 Census who resided in households with an income less than or equal to the poverty level. It was then assumed that the rate of poverty will not have a statistically significant difference from the economically disadvantaged rate for the female population in each county. The 1980 female rate of poverty was factored against JTPA Title II-eligible estimates for youth and adults for the current period to estimate the number of females eligible for JTPA Title II.

5. RACIAL AND ETHNIC GROUPS

The number of JTPA Title II-eligible by race and ethnic origin is the number of individuals of those subpopulations ages 14 through 69 residing in households which were below or at the economically disadvantaged level in each county. Using the CPSM, ratios of the incidence of racial and ethnic subpopulations who resided in households below or at the poverty level in the 1980 Census were derived. The total subpopulation in the 1980 Census was factored with a population projection supplied by DCS. From the projection, a growth rate was derived and was applied to the subpopulations. These calculations are based on an assumption that the subpopulation growth rate will be equal to the growth rate of the population as a whole. The projected racial and ethnic population is increased proportionately to total population growth from the 1980 Census to the current period, assuming that the rate of poverty will not have a statistically significant difference from the economically disadvantaged rate for the racial and ethnic subpopulations in each county. The 1980 racial and ethnic subpopulation rate of poverty was factored against the racial and ethnic subpopulation projections for the current period to estimate the number of persons in each subpopulation eligible for JTPA Title II.

6. PUBLIC ASSISTANCE RECIPIENTS

The definition of a public assistance recipient includes all persons who are low income and who have received a cash transfer payment of public assistance. The Wisconsin Department of Health and Social Services (DH&SS) was not able to provide an unduplicated count of persons who received public assistance payments during the previous year, which was necessary in order to estimate valid projections. Instead, we are able to obtain an unduplicated number of persons ages 14 through 69 receiving one of four discrete categories of public assistance during each month of the previous year. The discrete categories of public assistance include: Aid to Families with Dependent Children (AFDC), General Relief (GR), Relief to Needy Indian Persons (RNIP), and Refugee

Cash Assistance (RCA). To obtain a monthly population average, we obtained a mean of twelve monthly unduplicated recipient counts which was reported to DHSS and took this average as a proportion of the JTPA Title II-eligible population. All public assistance recipients are assumed to be economically disadvantaged.

7. AFDC-WEOP, JTPA-ELIGIBLE

The total number of individuals who would be eligible for services in the Aid to Families with Dependent Children - Wisconsin Economic Opportunities Program (AFDC-WEOP) is defined as the number of AFDC recipients who would be enrolled in the work-incentive WEOP program, if that program were available in each county of the state. The Department of Health and Social Services (DH&SS) in conjunction with the Department of Industry, Labor and Human Relations (DILHR) currently operates AFDC-WEOP programs in 27 counties. In order to estimate the number that would be enrolled in an AFDC-WEOP program if it were available in all counties, an average ratio was obtained of the number of AFDC-WEOP participants to AFDC recipients currently enrolled in 26 of the AFDC-WEOP counties (excluding Milwaukee) and, using the CPSM, the ratio was projected into counties not participating in AFDC-WEOP and factored against AFDC recipients in each county. For those counties in which AFDC-WEOP programs are operating, the actual number of AFDC-WEOP participants in the most recent program year was established. Once the number of AFDC-WEOP-eligible persons was estimated for each county, the county estimates were added to the SDA level and were then taken as a proportion of the total JTPA Title II-eligible.

8. EDUCATIONAL ATTAINMENT STATUS (DROPOUTS)

Educational attainment status refers to individuals ages 16 through 69 who have left a formal educational institution without obtaining a high school diploma and who have not obtained a General Equivalency Diploma (GED).

To establish the estimated number of dropouts, the ration of 16-19 year-olds enrolled in school in relation to the total 16-19 year-old population was derived from the "Employment and Training Report of the President, 1982." This ratio was applied to county population 16-19-years-of-age estimates to estimate an in-school population figure. The enrolled ratio is a national figure, but precise county ratios are not necessary since applying a relatively small county dropout percent will narrow variation between the national and county in-school ratio. The 1980 dropout rate for each county, supplied by the Department of Public Instruction, was then applied to the in-school 16-19-age cohort to establish an estimate of the 16-19-age cohort dropouts.

The 16-19-age dropout rate for each county was then divided by the state average dropout rate for 16-19 year-olds to produce a relative dropout rate among the counties. The relative dropout rate was then factored against the state average dropout rate for 25-64 year-olds to derive a 25-64-age cohort county dropout rate. In turn, the 25-64-age cohort county rate was factored against the 25-64-age county estimated population to produce an estimate of 25-64-age cohort dropouts. The 25-64 dropout rate was derived from the 1980 Census and is simply the number of persons age 25+ who completed up to 3 years of high school divided by the total 25-64-age population.

The teen and adult dropout estimates were then added, and the ratio of the 16-64 estimated economically disadvantaged population to total population was then applied, which established a county estimate of total economically disadvantaged dropouts. Individual county estimates were then summed to establish SDA JTPA Title II-eligible dropout estimates.

9. HANDICAPPED

JTPA Title II-eligible individuals are defined as those people with a handicapping disability who live in households with income at or below the economically disadvantaged income level.

The estimated total population of handicapped persons by county was supplied by the Department of Health and Social Services (DH&SS), and was estimated through the use of the Ridge-Worral Formula, which factors national regression weights for age, sex, race and household income into a disability estimate. It is conservatively assumed for establishing the JTPA-eligible handicapped population estimates that the disabled population suffers the same rate of being economically disadvantaged as the county population as a whole.

10. OFFENDERS AND EX-OFFENDERS

The subpopulation of Offenders and Ex-offenders is defined as the number of individuals age 16 through 69 who have been committed to the supervision of the Wisconsin Department of Health and Social Services, Division of Corrections, and are either inmates of penal institutions or are serving on probation or parole. Annual population figures are supplied by the DH&SS for each county and are summed to the SDA level. Inmates of penal institutions were recorded in their county of permanent residence, rather than in the county where the institution is located. It is assumed that all members of the offenders and ex-offenders subpopulation are economically disadvantaged.

11. VETERANS AND VIETNAM ERA VETERANS

The number of Veterans and Vietnam Era Veterans was supplied by the Veteran's Administration for each county. In order to estimate the portion of the population which would be JTPA Title II-eligible, it is necessary to assume that veterans have the same incidence of being economically disadvantaged as the population as a whole. Utilizing the CPSM, the rate of economically disadvantaged persons in the population, as identified in the 1980 Census, was factored against the veterans' population figures. County estimates were added to the SDA level.

12. REFUGEES

A refugee eligible for JTPA Title II services is defined as an economically disadvantaged person who has been granted refugee status by the U.S. Immigration and Naturalization Service (INS) based upon their reason for leaving their country of origin.

The known refugee population is obtained from the DH&SS Refugee Resettlement Office on a county basis. It is assumed that all refugees, 16 through 69 years of age, are at or below the economically disadvantaged level. County refugee figures are added together to the SDA level.

13. DISPLACED HOMEMAKERS

A displaced homemaker eligible for JTPA Title II services is defined as an individual living at or below the economically disadvantaged level who:

a. Has not worked in the labor force for one or more years but has, during those years, worked in the home providing unpaid services for family members; and

b. Either:

  i. Has been dependent on public assistance or the income of another family member, but is no longer supported by that income, or

  ii. is receiving public assistance because of dependent children in the home; and

c. Is unemployed and is experiencing difficulty in obtaining or upgrading employment.

Neither the Census nor BLS provided data on displaced homemakers; therefore, the methodology used to estimate the incidence of displaced homemakers eligible for JTPA Title II services uses the ratio of female heads of households, with related children, and living at or below the poverty level, to total householders with related children as obtained from File 3A of the 1980 Census for the State. This ratio was factored against the state ratio of family householders to total population to yield a ratio of female householders with children at the poverty level to the total population. It was assumed that the incidence of female heads of households who are economically disadvantaged is equal to the incidence of female heads of households living in poverty. The ratio of female household heads living in poverty was then factored against the projected economically disadvantaged population estimates for each county. County estimates were then added to achieve SDA estimates.

14. TEENAGE PARENTS

Teenage parents eligible for JTPA Title II services are defined as individuals under 20 years of age with children who live in households whose total income is below or at the economically disadvantaged level. The estimating procedure begins with Table 84 of the 1980 Census Summary Tape File 4. Table 84 contains, for each county, the number of family units at various income levels cross-tabulated with the age of the household head. The total number of families in each county with less than $15,000 in income and with household head between 15 and 24 years of age was obtained. Since data is not available which relates the age of parents with economically disadvantaged income levels, we are required to use an income level of $15,000 or less as the family income benchmark. The teenage-headed portion of the total cohort was assumed to be significantly smaller than the 20-24 headed portion. The percent of the total for each single-year category was increased proportionately with age and with the amount of the increase held constant. This procedure is known as the Constant Cumulative Rate Growth Method (CCRGM), which results in more weight being given to the older age categories. Teenage headed families, using the CCRGM, accounted for 27% of the total households headed by a person between 15 and 24 years of age and whose total household income is less than $15,000. In order to estimate the number of teenage parents, the estimated number of teenage households was multiplied by two to include both parents.

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